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The
BATTLE OF JUTLAND

31 May--1 June 1916

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The BATTLE OF JUTLAND

31 May---1 June 1916

I

"THE TWO WHITE NATIONS"

(Extract from, containing a narrative of the Battle of Jutland.)

By Commander George von Hase of the German Navy

Severe hardships is in store for the German nation. Our youth will grow up in a subjugated Germany in which foreign officials will compel them to do statute labor for them. We shall be made to feel the contempt with which the Anglo-Saxon regards us. Even the French and Italians, and other nations, who are mentally, physically and morally inferior to us, will regard us as crude and justly punished barbarians.

I am firmly convinced that our German youth will not be disconcerted thereby. Strong-hearted Germans, young and old, must and will devote their efforts to prevent our people from allowing their national characteristics to perish in a weak, un-German, bondsman's view of life and the world. It is the duty of we older men to aid the German youth in this struggle both by precept and example. We must keep alive the memory of all that has made the German people strong and proud; the deeds and times in which the German people have proved themselves to be of true nobility.

Two walks of life have been familiar to me during the 22 years in which I have been permitted to serve the Fatherland as a naval officer, that of the German officer and that of the sailor. When today I look back upon the past, revolution and defeat having almost utterly wiped out these two phases of our culture, I do so with a feeling of gratitude toward the profession, in which I lived and worked with German men and youths who were true Germans at heart and who in war and in peace devoted their efforts and their lives to the greatness of Germany. And I am thankful to my profession for bringing me into association with almost all the nations of the earth under conditions which always gave me reason to be proud that I was a German and a sailor.

I hope that what I shall now relate concerning the period of my former calling may contribute toward filling the German youth with the same enthusiasm for the Fatherland as filled the men of Germany before they were forced to draw their swords against a world of enemies; and with the same pride with which we fought

and advanced from victory to victory for four long years, and with the feeling of a nation in no respect inferior to any other, until we finally succumbed when our weapons were struck from our hands at a most critical moment by men of our own nation who in their nature were not true Germans.

My little book will treat of two historical meetings between the Germans and the English.

The first meeting occurred shortly before the outbreak of the war it was highly characteristic of the relation in which we Germans at that time stood toward our present deadly foes, the English. It was in June, 1914, when a large English squadron visited Kiel. I was detailed as personnel aide to Vice Admiral Sir George Warrender, who was then commander in chief of the fleet, for the duration of the stay of the squadron at Kiel. During this time, in which the murder of Serajevo occurred, I, together with the English ambassador, Sir Edward Goschen, and other guests of the admiral, lived on board his flagship, the King George V.

Early in July, 1914, immediately after the departure of the English squadron, I wrote down my experiences and the impressions received during this period on board the King George V, from notes kept in the form of a diary.

The second historical meeting of which I shall speak was the battle of the Skagerrak. In this battle I had the good fortune, as chief gunnery officer of our largest, fastest, and most powerful ship, the battle cruiser *Derflinger*, to participate in the hottest part of the battle, as well as in all the other phases of the conflict and to play a decisive role in the destruction of the two English battle cruisers, the *Queen Mary* and the *Invincible*. As no report of the battle has thus far been published in which a participant describes and passes judgment upon the engagement in a wholly impartial spirit and not handicapped by the censor, I have endeavored, while describing my own experience, to portray what happened solely from an historical and absolutely unprejudiced point of view, and to depict the battle, so far as I was able to observe it, as it actually took place.

Before I describe these two meetings, which have now become historical, I should like to cite briefly here a typical example of how, before the war, in spite of all envy and rivalry, no true Englishman thought of regarding a true German as other than a representative of an equal and related nation.

This was in the year 1913.

Off the coasts of Albania ships of almost every nation were lying at anchor. The commander of the German cruiser *Breslau* had invited the admirals and commanding officers of all nationalities to dinner. Next the German commander sat the English admiral, and all around, between Germans and Englishmen, sat Italians, French, Russians, Spaniards, Turks, Greeks, and Albanians, in a motley assemblage. Toasts had been proposed and the political situations were being animatedly discussed in all possible languages. The English admiral and the German commander had seen each other furtively examining the members of this strange round table, and they exchanged their observations regarding the highly diversified types of people.

Suddenly the English admiral raised his glass, gazed straight into the blue eyes of the German commander, and as their glasses touched, softly whispered: "The Two White Nations." With

flashing eyes the two men regarded each other the representatives of the two greatest seafaring Germanic nations. They felt that they were of one stock, originally members of one and the same noble people.

Thus and not otherwise did every true German and every true Englishman feel before the war.

And now? Now, the English people and their imitators dare to call us "Huns." The other of "Two White Nations" gives to our noble nation which has fought for right and freedom, for hearth and home, as no other people in the world have ever fought before, the name of a Mongolian tribe of the lowest civilization.

German men! German youths! do not permit yourselves to be disturbed by stupid arrogance of this sort. Prove daily to our enemies by your actions that our civilization is not inferior to that of any other nation in the world; and see to it that the world recognizes the truth, that we have fought the war in a no less knightly fashion than our opponents, who forced us to harsh retaliatory measures solely by their own cruel methods.

THE HISTORICAL VALUE OF PERSONAL NARRATIVES OF NAVAL BATTLES

Anyone wishing to narrate his war experiences may do so in two ways: First, the narrator may enlarge upon his own experiences, which in many instances would be of little interest to his hearers or readers, by material derived from other sources, thus producing not so much an accurate account of the events in which he participated but a more or less vivid picture of the entire conduct of the war. Second, one may simply narrate his own experiences, however undramatic and unimportant they may be in comparison with the war as a whole, thus making oneself responsible for the historical accuracy of his narrative even to the smallest detail. In describing the battle of the Skagerrak, it will be my endeavor to follow this latter method.

The day of Lowestoft had plainly demonstrated to me that it is almost impossible even immediately after a battle to write down in chronological order the events of the battle from the verbal reports of the participants. It was the custom in the Navy to keep no records during the engagement, this to insure that each man would be absorbed only in the duties of his particular station. This fact made it impossible for me even after the battle of Lowestoft to determine satisfactorily at what ranges and in exactly what directions we had fired when we were bombarding cities and later when the British cruisers and torpedo destroyers were under our fire. In the official account of the battle, the statements as to whether the enemy torpedo boats fled toward the west or toward the east differed materially. I therefore took steps to make certain that in any future battle all gunnery commands and occurrences and my own observations would be carefully recorded. I directed an old reliable petty officer in the central station of the main battery to write down each order as given by me. As his telephone headpiece was connected with mine, he was able to hear every order that I gave. This phone also enabled me to maintain communication with the observation officer in the foretop and with the officer at the range telephone clock in the central station. In ad-

dition to writing down my orders, he also recorded the range for each salvo of the main battery and in what direction the guns were trained for each salvo. The train was reported in degrees, beginning with zero degrees for dead ahead. The guns were therefore at 90° when trained on the starboard beam, 180° when trained astern, and 270° when trained on the port beam. In the central station was an electric fire-control device from which one could read at any instant the positions of each turret in azimuth. In addition to the above, an accurate record to within 10 seconds was kept of the time at which each order was given and each shot fired.

The courses and speeds of a ship during a naval battle are recorded by a quartermaster stationed in the central station, who obtains his readings from the compass and speed indicator. With this data as plotted on the navigator's chart, it would be easy to plot the enemy position at any phase of the battle, knowing one's own course and speed and the direction of fire and range of one's own guns. After the battle of Lowestoff, I developed in detail this system of keeping records of both battle target practice and clear ship for action exercises. In addition to the above, I also had recorded at other important battle stations, such as the gun turrets and centrals of the secondary battery, all orders and announcements which were received at or transmitted from these stations. I also had a record kept of all important events occurring at their stations by the following, viz, the second gunnery officer and the fourth gunnery officer, who were stationed in the after conning tower. I emphasized constantly in our drills that it was of the greatest importance to keep these records during the battle. Hence in the battle of the Skagerrak, a good record was kept at all the stations mentioned above, thus enabling me to give an accurate account of almost every shot fired by the ship's batteries. By knowing the direction and range of those salvos which we knew hit the target or fell in the immediate vicinity of the enemy, it was not difficult to draw a mathematically correct diagram of the battle. These diagrams, which are still in my possession, together with my diary and letters written to my people, form the basis of my report on this battle. Unfortunately the records made in the 30.5 centimeter turrets, Caesar and Dora, were completely destroyed when those turrets were demolished.

* * * *

The Spectator of 9 June, 1916, published an article on the value of official and personal narratives of naval battles and in particular the battle of the Skagerrak. The author, Bennet Copplestone, gave an excellent opinion concerning the value of all such narratives in which, as can not happen otherwise in war, the censor and military interests have a controlling effect. The author of the article, in my opinion, had at that time taken great pains to ascertain the true story of the battle from both the English and the German reports. Naturally he could not altogether refrain from viewing the matter from an English standpoint, and, in some instances, he furnished us with absolutely new details, especially concerning the tactics of the leader of the English battle cruisers, Admiral Beatty, who by utilizing his ships, which far surpassed ours in speed, executed a very typical encircling maneuver. There follows a translation of the article from English into German, the publication of which in German papers was not permitted by the German censors in the year of 1916:

This article in the Spectator gives a very clear idea of the

difficulties met in accurately describing a naval battle after its occurrence. In order to be able to describe the battle of the Skagerrak with perfect accuracy, it would be necessary for the historian to have at his disposal all the official and personal records of both sides. But the English will find very little interest in transmitting to posterity the exact details of this for them inglorious battle. And shall we, after the collapse of our Navy and with a pacifist government at our head, undertake it? I trust so. Meanwhile, we who took part in that battle must do our utmost to insure that this duel between "The Two White Nations," maritime nation against maritime nation, shall be handed down to our descendants as it actually occurred.

ON BOARD THE "DERFFLINGER" ON ITS WAY OUT TO THE SKAGERRAK

On 31 May, 1916, the battle cruisers weighed anchor at 3 o'clock in the morning. They were the Luetzow (the flagship of Vice Admiral Hipper, commanding the scouting ships), Derfflinger, Seydlitz, Moltke, and Von Der Tann. We had passed the night anchored in Schillig Roadstead off the entrance of Jade Bay. Ahead of us were the small cruisers and several torpedo-boat flotillas. It was a beautiful clear night, which was soon followed by a glorious morning. The sun in all its majesty appeared over the horizon and flooded the sea with its golden beams, and soon there was visible to us that unforgotten picture for which we had so often longed—the entire high seas fleet steaming toward the enemy. Some distance ahead of us were the small cruisers in column surrounded by a screen of torpedo boats that constantly circled around the cruisers in search of hostile submarines, like shepherd dogs caring for their flocks. Next came the battle cruisers, five powerful ships with defiant names, the pride of the fleet. The Luetzow and Derfflinger, sister ships, were both completed during the war. The Luetzow joined the fleet just two months before the battle. One of the first cruises of the Luetzow was the raid against Lowestoff. The Derfflinger and the three other battle cruisers were together in the battles of Scarborough, Doggerbank (24 January, 1915), and Lowestoff. All of the battle cruisers were manned with picked officers and veterans crews and at that time untainted by sinister influences. On the 31st of May we numbered on board the Derfflinger 1,398 men; not one was absent on leave, but there were a few on the sick list. Those to whom leave had been granted were to have departed on the previous day, but upon receipt of the order to be in absolute readiness their leave was held up. The fact that none of our men were absent on leave was a great advantage to us as it insured absolute coordination in the battle.

The Derfflinger was commanded by Capt. Hartog, with Lieut. Commander Max Fischer as executive officer and Lieut. Commander von Jork as navigator. The gunnery officers under my command were Lieut. Lamprecht, second gunnery officer; Lieut. Hauser, third gunnery officer; and Lieut. von Mellenthin, fourth gunnery officer. The turret officers were Lieut. Freiherr von Speth-Schuelzburg and Lieuts. (Junior Grade) Hankow and von Boltenstern. The observation officers were Lieut. von Stosch and Lieut. (Junior Grade) of Reserve Schulz. The order transmitting officer was Ensign Hoch and the range officer Ensign Friedrich. The torpedo officers were Lieut. Kossak and Ensigns Schilling and von der Decken; adjutant and signal officer, Ensign Peters;

wireless officer, Ensign Thaer; ship's surgeon, Dr. Freyer. The chief engineer was Staff Engineer Kohn. All the officers, with the exception of Lieut. von Mullensthin, who had been detached for a course of study, were present on board.

The battle cruisers also were surrounded by a screen of torpedo destroyers that cruised about us like a swarm of bees. In our numerous sweeps through the North Sea and the Baltic many a torpedo had been fired at us from the English submarines, but up to this time only the Moltke had been hit. The Seydlitz ran into a mine in the raid on Lowestoft and was forced to return after the admiral had shifted his flag to the Luetzow. It was necessary that we should exercise all precautions, so that all five of us should reach our rendezvous on the Norwegian coast.

Astern of us on the clear horizon we made out our main body of battleships; 22 battleships stood in line, a proud armada. At the head was the third squadron comprising our most modern ships, with the flagship Koenig leading; then came the fleet flagship Friedrich der Grosse, with the commander in chief, Admiral Scheer; then came the first squadron containing ships of the Helgoland and Nassau class and bringing up the rear, the second squadron containing the obsolete battleships of the Deutschland class, among which was my old ship, Hessen, on board which during my five year's tour of duty as gunnery officer I had conducted so many target practices.

The battleships were surrounded by a large number of small cruisers that acted as a screen. There were also the usual number of submarines and mine-sweepers surrounding the battleships. West of Helgoland and Amrum Bank the course was changed to north. Half of the gun crews were at their stations, the other half were sleeping in their hammocks near their guns or near their battle stations, in the ammunition rooms, gun-control stations, etc. I remained on the bridge during the night. I had no particular duties while cruising. The second and third gunnery officers took turns as senior watch. My commanding officer followed the principle that the executive officer, the first gunnery officer, and the first torpedo officer should have as much sleep and rest as possible while cruising, that their nerves might be in good condition when the ship went into action, an excellent regulation which was carried out by us not only in theory but also in practice. In my case a cruise of this sort was a genuine pleasure trip. If we had news of the enemy, there was something out of the ordinary to see. If the weather was specially fine, I remained on the bridge; otherwise I slept, read, or played chess in the mess. About once every two hours I made an inspection of all the guns, questioning the officers on watch and the gun captains to make sure that everything was ready. I was usually accompanied by the Heinzelmännchen in my rounds through the ship, and as a matter of fact we always found something that needed immediate attention. The Heinzelmännchen then summoned his gang, comprising electricians, artificers, and voice-tube men, and within a very short time I would receive the report: "Port range telegraph on the third 15-centimeter gun is ready"; "Left ammunition hoist of Caesar turret repaired," etc.

Naturally I was always on the bridge when we entered a region in which submarines or mines had just been reported and on dark nights when torpedo boats were to be expected. But I could arrange this as I wished and such occasions were usually most agreeable ones to me.

I had a large room on the top deck. This room was divided into two parts not directly next to ship's side but set somewhat inboard. Except in stormy weather, I was able to have my side ports open and thus gain a good view of the sea from my cabin and immediately became aware if anything unusual was going on.

It thus happened that on 31 May after enjoying the sunrise—which to me on the high seas had always a fresh charm but which seen while lying at anchor in the brown waters of the Jade could not induce me to leave my bed. I turned over for a couple of hours' more sleep, then rose, shaved, made my toilet preliminary to breakfast in the mess. Most of the officers were compelled to go without the luxury of a careful toilet at sea as they were unable to use their cabins on the lower decks, as all the approaches were securely closed owing to the danger from mines.

After I had breakfast, I sat down in my comfortable room, did a little writing, and enjoyed a view over the sea. Before noon I had made another tour of inspection of the battery and at dinner there arose the usual topic of conversation "I wonder if we shall see anything of the enemy." The extent of our cruise was farther out than had been the case previously and torpedo boats were to make a search in the Skagerrak waters on the night of 31 May for hostile and neutral merchant ships. It was therefore assured that on this night our presence in the Skagerrak would be announced, that the English fleet would start out from England soon after receipt of this information and that we must count upon a meeting with the English main body on 1 June. Moreover groups of English armored cruisers and light cruisers had been reported off the Norwegian coast and it was probable that we would come up with these during the night of 31 May, or perhaps during the afternoon of that day. No one in the German fleet, not even the commander in chief, dreamed that the entire English Grand Fleet was at sea and steaming toward the same point that we were. Similarly in the English fleet, according to all reports, no one knew that the German fleet was at sea. There was no reason in the world to doubt the truth of this and yet ashore it was repeatedly asked "How did the English know that we were standing off the Skagerrak?" or "How did we know that the English were going to enter the Baltic?"

All this is idle talk. The battle of the Skagerrak was as reported by both admiralties, the result of a chance meeting of the two fleets while engaged in their frequent cruises into the North Sea. If one considers that the North Sea is larger than the whole of Germany and how easy it would be for two fleets to cruise in so vast a region without meeting, the remarkable chance which brought our advance scouts and the advance scouts of the English together was truly remarkable. The battle of the Skagerrak in its first phases developed exactly like a carefully prepared methodical battle in which first the small cruisers, then the battle cruisers and finally the main body made contact.

At our noonday meal from which half of the officers were absent on watch duty, an excited enthusiastic spirit prevailed. Almost everyone believed that this time we would use our guns, but no one talked of anything but the light forces or a squadron of the older armored cruisers. No one considered the possibility that the entire British fleet was standing toward us only a few hours away. A few were pessimistic and thought that we would soon be turning back without having accomplished anything. The chief surgeon while at sea always carried a large pocket com-

pass with him which lay on the table beside him. As the armor porthole covers of the officers' mess were closed and we therefore had no view of the sea and we were unable to tell when a course was altered, we called him our lower deck strategist. We kept constant check on his compass while at table. On the whole there was a feeling in the mess that we were on the eve of some unusual experience. As was the rule when we were making one of our excursions into the North Sea, no one at the table drank a drop of alcohol. Nevertheless, not one of us was a scorner of wine, woman, and song. But on every excursion we were as strict with ourselves as a sportsman is during a contest. From the moment of weighing anchor until we returned in the home roadstead, we were almost total abstainers.

We smoked our cigars and then the younger officers went on watch while those released from duty appeared at the table. I went to my room, stretched myself out on my bunk and watched the blue rings of my cigar and dreamed of battle and victory. If only we could fight it out with our guns this time. My whole professional career seemed to me so meaningless and so empty unless I could at least once know what it was to be engaged in battle on the high seas. Blow for blow, that is the way it would go. I knew from 12 hours of gunnery practice that I had learned to fire. That was sport that I could understand. If I just had the target in my periscope and the first crashing salvo had left the gun, nothing could then disturb my peace. Nevertheless I did not as yet know how I should feel in the thick hail of enemy shells, but that did not bother me; I would soon find out.

At 2 o'clock the drums sounded a long roll throughout the ship, the signal to "clean guns." Every one except the officers must immediately take their battle station. This is the most important hour of the day for the gunnery officer. During the cleaning of the guns, the entire mechanism is tried out, cleaned, and oiled and all the apparatus is checked to make certain that all adjustments are correct. I would go from gun to gun accompanied by the *Heinzelmännchen*. In the *Bertha* turret a belt of the ammunition hoist had slipped off the drum. Upon placing it back in position, I found that one part of the cable was badly damaged. I decided that it should be replaced by a new cable. This would take about an hour. For a whole hour then we would be unable to do anything if we should engage the enemy. I checked up to make certain that the gun crew was provided with everything they should have during the battle. On the 29th of May after long waiting, the fleet had received about a thousand gas masks from the Army. By order of the commander in chief, these masks were to be issued to the battle cruisers and the latest battleships. On the 30th of May they were hastily distributed and tried out in a short battle practice. It was necessary to make certain that each man had his gas mask within easy reach of his battle station. The ready ammunition lay in the gun turrets alongside the guns in amounts prescribed by regulations. The guns of the main battery were loaded and ready to fire a salvo at any submarine appearing on the surface.

The executive officer who regulated the details of duty on board had turned over to me the gun crews for the period between 3 and 4 o'clock, and had given orders that this time was to be utilized in gun drills and fire-control exercises, much to the disgust of my officers and men. But I knew only too well how great was my responsibility. I knew that I could count only

upon a proper operation of the entire battery when each device and each piece of mechanism was working as if in actual battle. The third gunnery officer who had charge of the secondary battery occupied the forward gunnery station for fire-control practice. Something attracted our attention. We buckled on our head telephone and then we heard "Normal switch stations for battle on the port side." In the subcentral station about 40 levers were moved over to the position ordered. The order "Switch for battle on port side" penetrated to all stations in the ship. I had my periscope directed on one of our small cruisers and gave the order "Man the range indicator." All the other gun periscopes and all the guns brought their electric indicator in line and were therefore accurately aimed at the position of the target at which I myself had my periscope aimed. I called "Question E-U?" That means in German that the first gunnery officer wishes immediately to be informed by the gunnery observation officer what change he estimates should be made in the range per minute according to his range indicator. It is the duty of the range finder officer to announce the difference in range per minute from the measured range. "Report from fore top; new range indicator lacking from fore top!" "Great heavens! The indicator will have to be brought from the gunnery officer. Gunner's Mate _____ will report to me after this drill. The fore top must work for the present with the old range indicator!"

I should like to say here a few things about the range indicator. The latest type was perfected by Lieut. Commander Paschen, first gunnery officer of the *Luetzow*. It is used to ascertain simultaneously the difference in range per minute and to determine the proper setting for the deflection scale. I will not weary the reader with a description of how the setting for the deflection scale was ascertained. It will suffice for the reader to know that a correction is applied to the sights in order to neutralize all the influences tending to divert the projectile from its path by means of a slide adjustment called the deflection scale. The influences which tend to deflect the projectile from its original path are wind, speed of ship, and rifling of the gun. There is still another correction which must be made for the speed of the enemy. The excellent device designed by Lieut. Commander Paschen enables one to ascertain without calculation the proper deflection scale setting after the indicator has been adjusted for the estimated course and speed of the enemy. The principal object of the range difference indicator was to ascertain the difference in range per minute. First the apparatus is set for one's own speed which is communicated to the forward gunnery station from the conning tower for each change in speed. The speed and course of the enemy is then estimated and the indicator is then set for that. The difference in range can then be read on the indicator without any calculation. We had devices of this kind in all parts of the ship but mostly of an older type, and which did not permit reading off the deflection scale setting. If the forward gunnery station was disabled, the gunnery officer could have the difference in range computed at other stations of the ship, the operator at the range difference indicator himself being unable to see the enemy.

This, of course, would make it necessary for the gunnery officer to keep the range difference indicator operator constantly informed during battle of changes in course and speed which are very important in fire control. The gunnery officer himself also

had an apparatus of this kind at hand and checked off by its means during battle the announcements of the observation officer or himself computed the difference in range in case the communication with the observation officer was interrupted.

The fire control exercises continued. "150 hundred! Salvo—fire!" This command was transmitted from the central station by means of telephone and gong to the 30.5 centimeter turrets. At the instant of the order "Fire!"—meaning the order and not the report of the discharge—the spotters stationed in the foretop of the order transmitter station, central and subcentral stations, pulled back the lever of the impact indicator. Expectant silence. At the end of the period of flight corresponding to the range, a loud-toned gong should sound at each impact indicator. The tone of this gong can be compared only with the dull sound made by a flock of sheep. I should hear simultaneously in my head telephone the impact announcers with the main battery in the foretop, the forward gunnery station, and the main central, but I heard only one gong, that in the foretop. I asked, "Why have the impact indicators not been manned." Reply: "Impact indicators have been manned but do not function." More work for the Heijnzelmaennchen. I give the order, "Put new batteries in all impact indicators at once!" And so we go on until finally I am convinced that all defects have been eliminated and that the battery is actually ready for battle. With this comfortable feeling I went into the mess to enjoy a cup of good coffee while sitting on the leather sofa.

I was not permitted to enjoy this pleasure very long, for at 4.28 p. m. the general alarm sounded throughout the ship, the two drums played the general march, and the watch piped "Clear ship for action!"

FIRST PHASE OF THE BATTLE OF THE SKAGERRAK (5.48 p. m. TO 6.55 p. m.)—ENGAGEMENT WITH THE QUEEN MARY—TORPEDO ATTACK AND ITS DEFENSE

When I reached the conning tower, I learned that it had been announced that the Frankfurt had sighted individual ships to the westward. The battle cruisers were already proceeding in column at maximum speed for the designated rendezvous. We saw ahead of us the small cruisers with their torpedo boats following rapidly, at the same time making a great deal of smoke. We could no longer see our own main body. Our torpedo boats could scarcely keep up as they lost much headway owing to the heavy swell. Otherwise, the sea was quite smooth and only a light northwest wind (force 3) was blowing. I climbed into the forward gun station. I say "climbed" because it required some climbing to reach the point where the gun periscopes were situated after one had passed the armored door on the top landing. Reports were already arriving: "The secondary battery ready; Order transmission ready; Foretop after gun station, main top ready," etc. When all the battle stations had reported, I reported to the commanding officer, "Guns ready."

We officers put on our telephone headpieces and the dance was ready to begin. I will ask the reader to glance at the diagram on the opposite page. The first time record in the diagram is 4.28 p. m. Up to that time the battle cruisers had been steering north. At 4.28 p. m. they altered course to the westward, which was held until 5.22 p. m. They then changed course to the north

until 5.33 p. m.; then to south until 6.53 p. m.; then to the north again until 7.55 p. m.; then frequently changing course until 9.22 p. m.; then a westward course until 9.45 p. m., and then chiefly a southerly course until the end of the day's battle.

By the aid of this sketch it will be possible for the reader to follow my description of the different phases of the battle and the course of the *Derfflinger*. The course of the *Derfflinger* was the same as that followed by the other battle cruisers as well as the enemy ships which came under the fire of the *Derfflinger*.

In the course shown as followed by the *Derfflinger* is indicated in red dotted lines the direction and range (in hectometers) of the salvos which were recorded as hits or at any rate as having covered the enemy. In these salvos the range therefore corresponds to the actual distance. The range at that moment shows the position of the enemy at the moment the salvo struck. The course of the enemy at whom we were firing against is indicated by a red line. This course is mathematically correct so far as it could be determined by the hits of our salvos. The other distances shown can not make the same claim to mathematical accuracy but deviate only slightly from the course actually steered by the English ships. At first, therefore, we ran for about a half hour almost due west and then for a half hour to the northwest.

All our periscopes and telescopes were trained on the enemy, but the heavy smoke of our cruisers obstructed our view. About 5 o'clock we heard the first shot and so learned that the *Elbing* had been hit and that the fire was being vigorously returned. My recorder in the central station recorded as the first item of information that I had given to the guns: "5.05 p. m., Our small cruisers report four enemy small cruisers not yet visible from the *Derfflinger*!" Later followed the orders: "5.30 p. m., Our small cruisers have opened fire! Train on the second small cruiser from the right! Load with armor-piercing shell and stand by! Point of aim right edge water line! 180 hundred! Distribute fire from the right! Deflection scale left 20! 170 hundred!"

It was already beginning to get hot in the gun station. I removed my coat and had it placed in the charthouse behind the gun station. I never saw it again. Up to this time not one of us had believed that we were attacking an enemy of equal power. This led me to say to the commander in the gun station, "Enemy battle cruisers have been reported." I also gave this information to the gun crews. It now became clear that in a very short time a life-and-death struggle would take place. For an instant it became noticeably more quiet in the gun station, but this lasted for only a few moments; then the din became again. Now everything moved along in faultless order and calm. I had the guns trained where I supposed the enemy must be. I had set my periscope for the maximum magnification of 15 times, which was the prescribed adjustment for clear, bright weather. But still I could see nothing of the enemy. Now, however, a change took place ahead of us. The small cruisers and torpedo boats had countermarched and were seeking cover behind the battle cruisers. We were now at the head of the line. The horizon was free of smoke, and we could now make out some small English cruisers which had also countermarched. Suddenly I saw large ships in my periscope—six large ships steaming in two columns. They were still a long distance off, but stood out clear-

ly on the horizon, and even at this distance they appeared powerful and menacing. We continued on our northerly course but a short time longer, and at 5.33 p. m. our flagship, Luetzow, behind which we were following as second ship in the line, turned to the south. The enemy likewise turned to the south on a converging course, and thus the two lines approached ever nearer as both squadrons steamed to the south at a maximum speed. The intention of Admiral Hipper was clear. He wished to lead the enemy battle cruisers toward our main body.

The recorder at this moment recorded my command: "5.35 p. m. Ship turns to southward. Prepare for battle on the starboard hand. 170 hundred. 165 hundred. Main battery armor-piercing shell. Train on the second armored cruiser from left 102 degrees. Ship's speed 26 knots, course ESE. 170 hundred. Our opponent has two masts and two funnels, also a small funnel close up to the foremast. Deflection left 10. Difference in range, — 1. 164 hundred." Still there was no order to fire from the flagship.

It suddenly became clear that both sides were seeking a decision at medium range. Meanwhile I obtained a good view of the enemy. The six large ships reminded me of the day on which I went out to meet the English squadron in Keil Bay to carry greetings to the English admiral. Again a haughty English squadron was approaching, but this time the greeting would be quite a different one. How much larger and more ominous the hostile ships appeared, especially when magnified 15 times. I now recognized them as the enemy's six newest battle cruisers. Six battle cruisers against our five. About this same proportion prevailed throughout the fight. It was an elevating and a majestic sight to witness these gray giants in the role of fate steam toward us.

The six ships, which at first had been steaming in two columns, now formed line. Like mammoth creatures of prehistoric days, they pushed each other aside with slow, measured movements.

But there was something more important to be done than to stand gazing. The measured ranges constantly grew smaller. When the range was 165 hectometers, I gave the order "Armor-piercing shell." That was the shell for short-range engagements. Everyone in the ship now knew that it was going to be a close-up fight, for I had often explained to the men how the two types of shell should be used. I continually sent out to the guns the ranges received by the range takers. Immediately after the change in course at 5.35 p. m. the signal was hoisted on board the flagship, "Fire distribution from the left." That meant that each German ship should take an English ship under its fire, counting off from the left wing. Accordingly we five German battle cruisers had to bring five English ships under fire, and the second ship, which I identified as of the Queen Mary class, fell to the Derfflinger. She proved to be the Princess Royal, a sister ship of the Queen Mary. Everything was ready; the tension increased every second; but still I did not dare to give the first order to fire, as I had to wait for the signal "Open fire" from the flagship. The enemy, too, still waited, approaching ever closer and closer.

"150 hundred" was my last order. Then a dull crash, and I looked forward: The Luetzow was firing her first salvo and simultaneously the signal "Open fire" was run up. At the same moment I called "Salvo — fire," and then our first salvo thundered forth. Our followers immediately fell in, and we saw among the

enemy everywhere the flash of guns and rolling clouds of smoke—the battle was on. My recorder in central wrote down: "At 5.48 p. m. ship turns to starboard. Range difference, minus 2. 150 hundred. Salvo—fire." Almost 30 seconds passed before our impact indicators—this time all three sounded together. The new batteries have worked well. The points of impact lay close together, but were "over"; that is, fell behind the target and too far to the right. "Deflection scale 2 points more to the left. 4 back. Again." Those were the commands for the next salvo. "4 back" meant that the ensign at the sight telegraph should shift the indicator of the telegraph 400 meters. "Again" meant that as soon as he had made his adjustment, he himself, should give the order from the gunnery central, "Salvo—fire." This relieved the gunnery officer and, furthermore, it prevented the order to fire from being given when perhaps the gun had not yet been adjusted to the new sight. The ensign in the central was able to tell by means of an electric indicator, in the case of each gun, whether the sight has been correctly adjusted or not.

At the sight telegraph in central sat Ensign Stachow, a young chap 17 years old, who served the sight telegraph and sight indicator, transmitted my orders to the gun turrets, and regulated permission to fire. His telephone headpiece was connected with mine and in this way I could keep track of all orders given by him. Up to the close of the battle the young ensign coolly and skillfully regulated the fire discipline of the main and secondary batteries; only at the beginning of the firing did he make a mistake.

The second salvo burst forth. Again it was "Over." "4 back," I commanded. The third and fourth salvos were also over, although after the fourth salvo I had ordered "8 back." "Great heavens. Ensign Stachow, what is the matter? I roared. "Once more 8 back." The firing list showed later that the first "8 back" had probably not been understood by the ensign; in any case he had not made the corresponding adjustment. Now the "8 back" came into effect. The sixth salvo, fired at 5.52 p. m., straddled the target, three shots over and one shot short. Meanwhile, we had approached to 119 hectometers as the sight indicator had at first run with 2 hectometers and then with 3 hectometers decrease in range per minute, and I had already traversed 16 hectometers. We had now been four minutes in the fight and had just succeeded in getting on our first salvo. That was not very satisfactory work. At first all the shots went beyond the target. This was due to the inaccurate measurement of the initial range and a delay in first reports of the measured range. I explained these great errors in measuring in the following manner: The range takers were deceived by the first view of the enemy monsters. Each one saw the hostile ship in his range finder magnified 23 times. At first all thoughts were concentrated on the appearance of the enemy. Each one was busy trying to determine in his own mind where the enemy was. Thus, when the order "Open fire" suddenly came, the measured range was not accurately set. The mistake can not be charged to a lack of ability, for during the rest of the battle the ranges were measured very accurately; nor can any doubt be entertained as to the efficiency of our range finders, as, on the contrary, our Zeiss stereopticon base-line apparatus during the battle thoroughly proved its worth. The range-finding officer reported to me later that the measurements on all range finders, even at long ranges, seldom varied more than 3 hectometers.

Precious moments had been lost, but now I had my aim and at 5 hours 52 minutes 20 seconds the recorder wrote down my order "Good; fast." "Effect." "Good; fast," means that Ensign Stachow in central gave the command every 20 seconds for the main battery "Salvo—fire," and the word "effect" means that the secondary battery should immediately after each salvo of the main battery fire two salvos as quickly as possible. An ear-splitting, deafening roar began. We fired on the average one powerful salvo, including the secondary battery, every seven seconds. Whoever had witnessed firing on board a dreadnaught with service ammunition will be able to form some idea of what that meant. It was impossible to obtain any information while the salvos were being fired. Thick masses of power smoke continuously rolled about the muzzles of the guns forming huge smoke clouds, which for seconds at a time hung before us like an impenetrable mask and then passed over the ship through the action of the wind and the speed of the vessel. It thus happened that for seconds at a time we were not able to see the enemy, and that our conning tower was enveloped in very thick smoke. Naturally, rapid fire of this kind from both calibers could be maintained for only a short time. It demanded almost superhuman effort on the part of the gun crews and the ammunition crews. Moreover, it finally became impossible to distinguish the points of fall of the main and secondary batteries from each other. I then commanded "Secondary battery silent," and for a time checked only the fire of the main battery. As a rule, it did not take long before the shots passed over or fell short of the target, owing to some movement of the enemy, and then the fire was again slowed down. Each salvo then had to be gauged anew, and the shells again fell about the target until one of the shells covered it. Then began again "Good, fast." Once more a salvo crashed forth from the heavy guns every 20 seconds, and in the intervals the secondary battery fired. Unfortunately the secondary battery could shoot only at a range not over 130 hectometers.

It seemed to me amazing that apparently we had not as yet been hit. Only at rare intervals did a stray shot pass in our vicinity. I examined the gun turrets of our target more closely and realized that this ship was not firing at us. She was joining in the bombardment of our flagship. For a moment I observed the third enemy ship; she was firing at the ship following us. No doubt about it. Through some error we had been passed over. I smiled grimly. And now, quite calmly, as if we were in target practice, I brought the enemy under our fire with increasing accuracy. All thoughts of death or drowning were forgotten as it were. The sportsman's joy awakened and everything within me danced with glee during the wild delight of battle and all thought was concentrated on the one wish, to hit the target rapidly and accurately, to land telling shots on the haughty enemy, wherever and whenever it was possible. It was not going to be easy for him to prevent my return home. I had merely whispered to myself "We are being skipped," but in an instant the whisper passed from mouth to mouth in the gun station, and filled everyone with unbounded joy. Besides we two gunnery officers only the two petty officers at the aim indicator and range finder could see anything of the enemy. Nevertheless, we had left the lookout slits open—not an altogether sagacious procedure—but one could scarcely see the enemy with the naked eye. The men in the gun stations were therefore eager to learn what they could from us.

And so the battle went on. Huge columns of water, from 80 to 100 meters in height, rose where our shots fell; they were almost twice as high as the enemy's masts. Our joy at being passed over did not last long. The mistake had been detected by the other side and we were now often covered with well-aimed salvos. I again examined the gun turrets of our opponent on which I had directed my glass and saw that the guns were now aimed directly at us. At the same time I suddenly made a discovery which filled me with surprise. At every salvo which the enemy fired I clearly saw four or five projectiles approaching through the air. They looked like long, black points. They gradually became somewhat larger and suddenly—boom—they reached us. They exploded on impact with the water or the ship with a deafening roar. Finally, I could quite plainly see whether the shells were going to fall in front of us or pass over us, or whether they were going to honor us individually. Impact on the sea always raised a huge column of water. Some of these water columns up to half their height were poisonous, greenish yellow in color, and doubtless produced by lyddite shells. They lasted fully 5 or 10 seconds before they collapsed. They resembled giant fountains and in comparison with which the famous jets of Versailles were mere child's play. During the later phases of the battle, when the enemy had gotten our range better, it frequently happened that columns of water of this sort fell over the ship, flooding everything, even putting out the fires. The first hit on our ship which came to my knowledge struck above the casemate. It first penetrated a door with a round glass window. Back of this door stood an excellent petty officer, Boatswain's Mate Lorensen, who had been stationed under deck with the reserves, but remained there in order to be able to observe the battle. His curiosity was severely punished; the shell neatly separated his head from his body. We approached our opponent to within 113 hectometers. At 5.55 p. m., however, I was again firing with a slight setting of 115 hectometers, after which the range rapidly increased. At 5.57 p. m. the range indicator was running with an increase in range of "plus 6." At 6 p. m. the range was 152 hectometers, at 6.05 p. m. the range was 180 hectometers, and the enemy then passed out of reach of our guns, as 180 hectometers was our maximum range.

We were able to increase our range slightly beyond this amount by directing the gun pointer to fire no longer at the water line of the enemy but at the upper edge of the funnels, or mast head, and finally at the very top of the mast. But that amounted to only a few hundred meters. After the battle of the Skagerrak our ranges were considerably increased by all kinds of improvements. Now, however, we were powerless in front of the enemy and could return his fire. This condition lasted up to 6.17 p. m. At 6.10 p. m. our flagship executed a turn of several points to starboard. The enemy had apparently also turned and thus we were rapidly approaching each other again. At 9.19 p. m. the range was again only 160 hectometers; 16 kilometers is in fact a pretty good distance, but the good visibility and the very clear points of fall made these ranges appear to us really small. The Zeiss lenses in our periscopes were excellent. I was able to make out, even at the greatest ranges, all the details of the enemy ships, for example, all the movements of the gun turrets and the individual guns which were brought to an approximately horizontal position for loading after each shot. Before the war no one in our navy believed that it would be possible to fight effectively

at ranges above 150 hectometers. I recall clearly various war games which we had played before the war in the Casino at Kiel, under the direction of Admiral von Ingenolh, in which all effect from shots above 100 hectometers was ruled out on principle.

How did things seem to be going with the enemy at this time? At 6 p. m. his rear ship, the *Invincible*, was blown into the air. I did not see her, as my attention was fully absorbed in directing the fire against the second ship. It was also impossible to hear the noise of the explosion, which must have been great, owing to the internal uproar in our own ship and the noise made by the exploding enemy shells in our vicinity, though we were able to hear the report of the enemy salvos as a dull roar when our own guns were silent for a moment. In the after gun station the explosion of the *Indefatigable* was observed and recorded. The *Indefatigable* had been taken under fire by our end ship, *Von der Tann*, and destroyed by the excellent direct fire of that ship. The successful fire control officer of the *Von der Tann* was the first gunnery officer of that ship. Lieutenant Commander Mahrhols.

With the English ships, the northwest wind carried the smoke of their guns past their ship to windward.* In this way the view of the English was often obstructed and their firing made difficult. But as the conditions of visibility were still more unfavorable toward the east than toward the west, the English battle cruisers had decided to take up a position which was tactically unfavorable. We were but little disturbed by the smoke from the enemy's guns, as it was sufficient with our stereoptical range finders if the range taker could see merely a little bit of the top of the mast.

At 6.17 p. m. I again took the second battle cruiser under fire on the port hand. I supposed that it was the same ship, the *Princess Royal*, at which I had already been firing. As a matter of fact it was the *Queen Mary*, the third ship in the enemy line. This came about through Admiral Beatty's flagship, the *Lion*, dropping out of the enemy line for a short time just at the moment that I was selecting my target, and owing to the smoke covering the enemy line in its withdrawn position, this maneuver was not in any way visible to us. From the reports published later in the English papers, it appears that Admiral Beatty changed over from the *Lion*, whose conning tower had become useless, to the *Princess Royal*. He must have changed his flagship, therefore, exactly as our own Admiral Hipper did somewhat later in the battle. Our flagship, the *Luetzow*, had kept the *Lion* continuously under a vigorous and effective fire of explosive shell. The gunnery officer of the *Luetzow* had preferred to use up all his explosive shell before changing to another type of munition, owing to the unfavorable ballistic effects which this might have. The *Lion* had been forced to leave the line for a considerable time in order to extinguish the fires raging in her. It thus happened that I was firing at the *Queen Mary* from 6.17 p. m. on. Certain difficulties in conducting the fire now arose, owing to the thick smoke from the powder and from the funnels collecting on the glasses of the periscope above the deck of the gun station, so that it became almost impossible to see anything. At such mom-

*The term "feuer luv" is used in battle to indicate the side from which the firing is done. The side turned away from the enemy is called "feuer lee."

ents I had to depend entirely upon the observations of the gunnery observation officer in the fore top, Lieut. von Stosch. This excellent officer observed and reported the fall of the shot with astonishing coolness and self possession. And his excellent spotting of the shot, upon the accuracy of which I could absolutely depend, contributed not a little to the success of our guns. While we could see nothing, Lieut. von Stosch in his airy perch, 35 meters above the suriace of the water, kept his periscope accurately trained on the enemy. A control system indicated on my periscope the bearing of the fore-top periscope. My gun pointer followed this bearing with his indicator and in this way we aimed all our guns on the enemy without being able to see him. Naturally this was merely an expedient. Ensign Bartels, who stood near me in the gun station and who aided me during battle by calling out the averaged ranges by the aid of my range-difference indicator and by observing the enemy through the lookout slits was always very quick in coming to my aid by wiping off the glasses from the gun station with cleaning rods which he had specially prepared for that purpose. In later phases of the battle, as the water thrown up by the enemy shell frequently broke over the ship and the thick smoke constantly adhered to the wet glasses, he had to clean the glasses almost after every shot. Finally, the cleaning rods themselves became soiled, and with a heavy heart I frequently had to send a man to the roof of the conning station to clean the glasses, where he was fully exposed to the danger of being hit by the enemy's shells or fragments of explosives. This duty was generally performed by my orderly (messenger) from the gun artificers' crew, Artificer Meyer, who had remained on the forward bridge near the gun station during the entire battle until finally fate overtook him and a fragment of shell shattered his leg below the knee.

As I have stated above, from 6.10 p. m. on both lines were steering a slightly converging course toward the south. At 6.15 p. m. we observed that the enemy was sending out his torpedo boats for attack. A little later our torpedo boats and the small cruiser *Regensburg* broke through our line and rushed forward for attack. A small independent naval battle now developed between the two lines of contending battle cruisers. About 25 English destroyers and an equal number of German destroyers engaged in a stubborn fight with their guns and thus prevented either side from making successful use of the torpedo boat against the battle cruisers. About 6.30 p. m. both sides fired a few torpedoes against the line, but without results. For us this battle of the torpedo boats was a magnificent sight.

The two lines constantly drew nearer to each other during this torpedo-boat battle, and now the most interesting gunnery duel of the entire day took place. I saw that the *Queen Mary* had selected the *Derfflinger* as target. The *Queen Mary* fired more slowly than we, but to make up for this usually fired full salvos. As she was armed with eight 34.5 centimeter guns, this meant that she usually discharged at us simultaneously eight of the enormous shells which the Russians called "trunks" in the Russo-Japanese war. I saw the shells approaching and must state that the enemy fired very well. All eight shots usually fell very close together, but almost always were either over or short; only twice did the infernal hail descend fully on the *Derfflinger*, and even then only one shell hit each time.

We fired as if we were at target practice. The head tele-

phones worked beautifully. Every one of my orders were correctly understood. Lieut. von Stosch announced with deadly certainty the exact position of the impacts. "On; two hits!" "On; the entire salvo hit the ship!"

I endeavored always to fire two salvos for the enemy's one. I was not always able to do this, as the enemy fired his full salvos with marvelous rapidity. I observed that the gunnery officer on the Queen Mary was firing with central control by means of the celebrated Percy Scott "firing director," as all the guns were fired absolutely simultaneously and the shell therefore fell at the same moment. The English gunnery officer was apparently standing in the foretop where he was able to see over the smoke of the guns and from there fired by electricity. This possibility meant a great advantage for the English ships. Unfortunately we had not devised arrangements for indirect firing from the foretop until led to do so by the lessons of the battle. I myself later contributed not a little of the introduction of indirect shooting in our navy, and also conducted the first indirect firing from the Derfflinger in accordance with the process invented by me which was later generally introduced under the name of the "Derfflinger process."

The Queen Mary and the Derfflinger waged a regular gunnery duel above the torpedo battle raging between us, but the poor Queen Mary had a hard time of it. In addition to the Derfflinger, the Seidlitz was also firing at her. The gunnery officer of the Seidlitz, Lieut. Commander Foerster, was one of our ablest gunners, who had been tested in all the previous engagements of the ship and was cool-blooded and of quick decision. The Seidlitz had only 28-centimeter guns on board. These projectiles could not penetrate the thickest armor of the Queen Mary. But each ship had thinly armored portions, the perforation of which by the 28-centimeter shell, could produce great damage.

The good functioning of our impact indicators prevented Lieut. von Stosch and me from ever confusing our points of all with those of the 28-centimeter guns of the Seidlitz. As the ranges were always greater than 130 hectometers, the 15-centimeter guns of both ships could not then be used in the fight against the Queen Mary. A simultaneous bombardment of the same enemy by two ships was only possible when each ship used only its heavy guns. If both the 15-centimeter batteries had meanwhile been firing, no one could have distinguished the impacts from each other.

About 6.26 p. m. occurred the historical moment in which the Queen Mary, the proudest ship of the English fleet, met her end.

From 6.24 p. m. on, each one of our salvos had landed on that ship. The salvo fired at 6 hours 26 minutes 10 seconds p. m. fell after the terrific explosion had begun inside the Queen Mary. At first a yellowish red flame appeared in the forepart of the ship. This was followed by an explosion, which in turn was succeeded by a much more violent explosion amidships, which hurled black pieces of the ship into the air, and immediately thereafter, the entire ship was shattered by a terrific explosion. Enormous clouds of smoke were developed. The mass fell together amidships; the smoke covered everything and rose higher and higher. Finally, nothing remained where the vessel had been but a thick black cloud of smoke. At the water line this cloud of smoke was of small extent but it broadened as it leaped into

space and seemed almost like a huge pine tree. The column of smoke, according to my estimate, was from 300 to 400 meters in height.

In the Times of 9 July, 1916, a gun captain on board the *Tiger*, which ship was astern of the *Queen Mary* in the battle, wrote the following description of the sinking of the *Queen Mary*:

"As the German squadron again engaged us it concentrated all its guns on the *Queen Mary*. They had tried in vain for the correct range for several minutes, but suddenly something remarkable happened; each shell which the German fired seemed suddenly to hit the battle cruiser. It was almost as if a cyclone was devastating a forest. The *Queen Mary* seemed to roll over slowly to starboard; her mast and funnels were gone; a huge hole yawned in her side. She listed still further. The hole in her side disappeared under the water which now rushed in, and the ship capsized. A minute and a half more and all that could be seen of the *Queen Mary* was her keel; then that also disappeared."

Later in the day our torpedo boats picked up two survivors of the *Queen Mary* and took them as prisoners to Wilhelmshaven; one was an ensign and the other a seaman. According to them, more than 1,400 men were on board the *Queen Mary*, among whom was a Japanese prince, the naval attache at London. The commander of the *Queen Mary* was Capt. C. J. Prowse. The English Admiralty stated in its report of officers lost on board the *Queen Mary*: "With the exception of four ensigns, all officers present on board were lost."

No sooner had the *Queen Mary* disappeared in a cloud of smoke than I looked about with my periscope for a new target. I swung the periscope to the left and to my surprise saw that two battle cruisers were still there. I then realized for the first time that I had been firing at the third ship. The *Lion* had in the meantime placed herself at the head of the enemy line. Our target was once more on the *Princess Royal*.

One minute and five seconds had therefore elapsed since the last salvo had fallen on the *Queen Mary* to the first salvo fired at the *Princess Royal*. I had had the range of the latter ship measured by the range taker in the gun station. The measured range was only 122 hectometers. I fired the first salvo with this range, but it fell short; likewise the next two salvos, so that I increased the range considerably for the fourth salvo. The range taker had apparently not at once realized that the range was no longer decreasing but on the contrary was rapidly increasing after the sinking of the *Queen Mary*. It appears in the record from the constantly changing deflections that the ship was steering a very irregular course, and that she turned out to port. The enemy was taking his bearings now somewhat more carefully. There was no prospect of a successful rapid fire. As a rule a full minute elapsed between salvos. We had to wait each time to observe the points of fall. When we had observed them, new commands had to be given usually for deflection and range, and for the sight periscope.

At 6.36 the range was 168 hectometers.

Meanwhile we saw that the enemy was being reinforced. Four large ships appeared behind the line of battle cruisers. We soon recognized them as ships of the *Queen Elizabeth* class. We had often discussed these ships in the navy. They were battle-

ships powerfully armed with eight 38.1 centimeter guns, with a displacement of 28,000 tons, and a speed of 25 knots. Their speed, therefore, differed very little from ours—26 knots—but they fired projectiles almost twice as heavy as ours. They engaged in battle at enormous ranges. We now received a violent fire and henceforth steered continuously a zigzag course. From 6.36 p. m. to 6.45 p. m. I did not fire at all with heavy guns. This was chiefly due to the smoke produced by the torpedo-boat engagement, which kept up between the two lines and our torpedo defense guns which were now brought into use by the third gunnery officer, Lieut. Hausser. Some of the English torpedo boats were now pushing their attack to devilishly close quarters. As I could see nothing of the large ships, I had ample opportunity to observe the surging of the battle. It was a marvelous picture. Now the Regensburg, with Commander Heinrich on board, the former commander of the Derfflinger, surged ahead of our lines at the head of the flotilla, maintaining a rapid fire at the same time our torpedo boats and the enemy boats closed in to the shortest ranges. I saw two of our boats lying dead in the water. They were looking badly and it was clear that they were doomed. Other boats came alongside in the midst of the fire, and took off the entire crews. One English destroyer sunk, others lay dead in the water unable to move. Our 15-centimeter salvos crashed forth incessantly. Lieut. Hausser got the range of several boats which he attacked one after the other with telling effect. On one boat he made visible hits; the boat stopped suddenly, and then disappeared in a cloud of smoke.

What a pity that we had no marine painter on board with us. The celebrated painter of marine views, Kaus Bergen, had often accompanied us on our sweeps in the North Sea. This time something had prevented him from doing so. He regretted this very much, but nevertheless he has become the most successful painter of the battle of the Skagerrak. Unfortunately, we were also strictly forbidden to take photographs on board. No apparatus for this purpose was allowed on board ship. This was done in an effort to protect ourselves against spying. That is why not a single picture was taken in the entire German fleet during the battle of the Skagerrak.

The recorder in the secondary battery central, Ensign Hauth, who had kept excellent records throughout the entire fight had noted the following, while the torpedo boat defense guns were being used:

“6.36 p. m., Secondary on the torpedo boats. By aim indicator. 60 hundred. On the torpedo boat farthest to left. Fire. 70 hundred. Fire. 64 hundred. Fire. 60 hundred. Fire. Fire. Good; rapidity. Fire. Fire. Fire.

6.42 p. m., Secondary battery stand by (abwarten). 68 hundred. Fire. 55 hundred. Fire. 50 hundred. Fire. Fire. 56 hundred. Fire. Fire. 70 hundred. Fire. 68 hundred. Good; rapidity. Fire. Fire. 70 hundred. Fire. Fire.

6.45 p. m., Ships turns to port. Fire. 80 hundred. Fire. 84 hundred. Fire. Fire.

6.48 p. m., secondary battery stand by!”

At 6.48 p. m., the torpedo boat defensive fire ceased and at 6.50 the entire formation altered course to north-northwest. This maneuver brought Admiral Hipper, with the battle cruisers about

7 miles to the fore of the head of our battleships which were steering a course about north-northwest at maximum speed, and whose head immediately thereafter engaged in the attack on the ships of the Queen Elizabeth class.

We learned later from the numerous hits with 10.5 centimeter shell that the English torpedo boats also had subjected us to a pretty intense fire. In the general confusion of the battle this had escaped me. The 10.5 centimeter shell naturally exploded without effect against our armor and only on unarmored portions of the ship did they do any damage, especially in the rigging where they destroyed our radio antennae and some gun telephone connections. One officer found an unexploded 10.5 centimeter shell in his bunk after the battle when he was about to turn in.

Between 6.45 p. m. and 6.50 p. m., I had fired eight salvos at 180 hundred with heavy guns, at the Princess Royal, but apparently without any noticeable success.

Our sudden turn to north-northwest course brought the head of our third skvadron into view, the proud ships of the Koenig class. Everyone breathed somewhat more easily. Having had in addition to the battle cruisers the five British dreadnaughts in front of us with their 38's, it had not been so very comfortable for us.

At 6.50 p. m. I announced to the guns "Ship is turning slowly to starboard! Our third squadron is here!"

Thus ended the first part of the battle. We had seen an English dreadnaught fly to pieces under our fire like an exploded powder cask. The *Derfflinger*, however, emerged from the battle with her fighting powers undiminished.

What wonder that we thought of new battles with the highest courage and full confidence of victory. We were in close battle contact with our best battleship squadron and we believed that we had opposite us only the four remaining battle cruisers and the four ships of the Queen Elizabeth class. Flushed with the pride of victory, we hoped to demolish the entire enemy force opposing us. We had acquired unshaken confidence in our ships. It seemed to us absolutely impossible that our proud vessels could be smashed to pieces in a few minutes like the *Queen Mary* and the *Indefatigable* had been. On the contrary, I had the feeling that we could cause each English vessel to explode in a very short time. If only our ship would steer a constant course for a time and the range was not too great; if possible, not over 150 hundred. We were eager to win new laurels. The high enthusiasm running through the ship was perceptible to everyone. The gun crews had done marvelous work by always having their guns ready, even during the most rapid fire, immediately the gong sounded. At the end of an hour of continuous firing, the gun tubes were already very hot, and their gray paint began to smoulder and turn brown and yellow. The calm manner in which the commanding officer had managed the ship also had an excellent effect. He had often helped me with information, but on the whole had given me a free hand, especially as to the choice of the enemy ship at which I was to fire.

The Second Phase of the Battle of the Skagerrak (6.55 p. m. to 7.05 p. m.)—Engagement with the Fifth Battleship Squadron—Beatty's Flanking Maneuver.

The first phase of the battle was gratifying and from the

gunnery point of view interesting; the second gave us as great for dissatisfaction as the first did for rejoicing. The enemy had come to have a profound respect for the effect of our shots, and now in the wild chase to the north had held himself as far as possible beyond our range, keeping us meanwhile within the reach of his own long-range guns. It will be seen from Sketch I that the ranges during the second phase of the battle scarcely fell below 180 hectometers. I fired only for the purpose of ascertaining whether or not the enemy was really out of range. In doing this I limited myself to individual shots from a single turret, in order to save ammunition. The upper edge of the funnels or masts were used as the point of aim for our guns. The enemy's fire also was not good at these long ranges. It is true, his salvos fell close together with a dispersion at most of from three to four hundred meters, but the fire control was not very successful, perhaps owing to poor visibility; at any rate, salvos as a rule fell at very irregular distances from our ship. Nevertheless, we already had received some bad hits, and two or three heavy shells struck us during this phase of the battle. Whenever a heavy shell struck the armor of our ship, the crash and detonation was followed by a vibration of the entire ship, and even our conning tower trembled. The explosion of the shell inside the ship produced a more muffled report which was propagated throughout the ship by numberless speaking tubes and telephones.

The four English battle cruisers were running to the northward, and because of their superior speed we were not able to keep up with them. At 7.21 p. m. the commander in chief made the signal "Take the battle cruisers in pursuit!" Our battle cruiser squadron, however, could not maintain more than 25 knots for any length of time, and the English were fleeing easily at 28 knots. We did not at time entirely understand the object of the enemy's maneuver. We supposed that he was hastening to join his main body, which the maneuver of the English cruisers had led us to understand was somewhere near. As a matter of fact, Admiral Beatty, by fully turning our flank while we were running at a maximum speed, and finally encircling us, had executed a magnificent maneuver, and his ships had shown a marvelous tactical efficiency. He had succeeded in crossing the T in an absolutely perfect manner. By capping us, he had compelled us to turn out, and thus finally brought us entirely within the circle of the English battleships and battle cruisers. In the latter phase of the battle, we could no longer as a rule distinguish individual enemy ships that happened to be in front of our guns; I can not therefore say with certainty at what time or if at all we later engaged Beatty's four battle cruisers.

After the gradual disappearance of the four battle cruisers, we were still confronted by the four powerful ships of the fifth battle squadron, the *Malaya*, the *Valiant*, the *Barham*, and the *Warspite*.

They could not have been making very much speed at this time, as they soon came within range of our third squadron and were taken under fire by its leading ships, especially by the flagship *Koenig*. The four English battleships thus at times came under fire of at least nine German ships, of which five were battle cruisers and perhaps four or five battleships. According to my firing record, we fired from 7.16 p. m. at the second battleship from the right, thence at the ship following the enemy leading ship. I had the guns fired at this great range with explosive shell.

The second phase of the battle passed without any great incidents for us. In certain respects this engagement with an enemy inferior in numbers but superior in fighting power, who held us under fire at ranges at which we could not reach him, was in the highest degree depressing, nerve racking, and harrowing. Our only means of defense was to drop out of the line for a moment when we observed that the enemy had gotten our range accurately. As the enemy could not foretell these movements, we quickly escaped from the hail of shell. I should state here that these small changes in course for the purpose of evading the enemy's rain of shell are not entered in the sketch, as we always immediately returned to our former position in the battle line at maximum speed.

Very soon after this conditions were greatly changed.

The Third Phase of the Battle of the Skaggerak (7.50 p. m. to 9 p. m.)—Hot Engagement with Battleships, Cruisers, and Torpedo Boats—Destruction of the "Invincible"—The "Derfflinger" Forced to Stop to Clear Away her Torpedo Nets.

At 7.40 p. m. enemy small cruisers and destroyers started an attack with torpedo boats. We were steering a course north-northeast at the time; that is, about six points to starboard.

The visibility was now quite poor, so that it was difficult to see the English ships. We fired at the small cruisers and torpedo boats. At 7.55 p. m. we turned to the east, and at 8 o'clock the entire battle-cruiser squadron moved off in echelon on a southerly course as the torpedo boats attacked us. In this way we avoided the enemy's torpedoes very successfully. At 8.12 p. m. we again turned toward the enemy. During this time we had fired only occasionally with the main and secondary batteries. At 8.15 p. m. we received a heavy fire. All about us were flashes of light. We could make out the ships' hull only indistinctly, but everywhere I could see along the horizon were enemy ships. As I could not see which was the beginning and which was the end of the enemy line, I could not take "the second ship from the right" under fire, but selected a ship which I could see particularly well. And now a bitter fight began. In a short time the uproar of battle reached its height. It was perfectly clear to us now that we had opposing us the entire English fleet. I realized at once by its huge hull that I had taken a giant battleship under fire. Cruiser and torpedo-boat engagement still raged between the two lines. Suddenly I saw in my periscope a German small cruiser pass by me in flames. I recognized the Wiesbaden. She was almost entirely shrouded in smoke, with only her stern showing, and the gun stationed there was firing incessantly at a small English cruiser. Brave Wiesbaden. Valiant crew of this good ship. Only a fireman, Zeene, was rescued by a Norwegian fishing boat, after he had drifted for three days on a raft; all the rest, including the poet, Gorch Fock, who loved the sea so deeply, had crowned their service to Emperor and country with a seaman's death. The Wiesbaden was effectively shelled by an English small cruiser. Again and again the shells hit the poor Wiesbaden. Fury seized me, and I abandoned my previous target, had the range of the English small cruiser measured, announced the range and deflection, and "Bang"—a salvo whistled over the tormentor of the Wiesbaden. One more salvo, and I had him. A high column of fire shot up to heaven. Apparently a powder room had ex-

ploded. The cruiser turned out and fled at high speed during which time I sent two or three more salvos after him. At this moment Lieut. Commander Hausser, who had been firing at the torpedo boat with the secondary battery, asked me: "Sir, is this cruiser with the four funnels a German or an English cruiser?" I directed my periscope at the ship and examined it. In the gray light the color of the German and the English ships looked almost exactly the same. The cruiser was not at all far from us. She had four funnels and two masts exactly like our Rostock, who was with us. "It is certainly English," exclaimed Lieut. Commander Hausser; "May I fire?" "Yes; fire away." I became convinced that it was a large English ship. The secondary guns were aimed at the new target and Lieut. Hausser commanded: "60 hundred." At the moment in which he was about to order "Fire!" something horrible, terrific, happened. The English ship, which I meanwhile supposed to be an old English battle cruiser, broke asunder, and an enormous explosion, black smoke, and pieces of the ship whirled upward, and flame swept through the entire ship, which then disappeared before our eyes beneath the water. Nothing was left to indicate the spot where a moment before a proud ship had been fighting, except an enormous cloud of smoke. According to my opinion, the vessel was destroyed by the fire of the ship just ahead of us, the Luetzow, the flagship of Admiral Hipper.

All this took place much more rapidly than the time taken in the telling. The whole thing lasted only a few seconds, and then we had already engaged a new target. The destroyed ship was the *Defense*, one of the older armored cruisers of the same type as the *Black Prince*, which was sunk by gunfire during the following night by the *Thuringen* and other battleships. The ship displaced 14,800 tons, was armed with six 23.4-centimeter and ten 15.2-centimeter guns, and had a crew of 700 men. Of the crew not a single soul was rescued. The ship was blown into atoms and every living being was destroyed by the explosion. As we saw the ship in a good light at a comparatively short distance from us and magnified 15 times by our periscope, we could observe the occurrence very accurately. I shall never forget this sight in all its gruesomeness.

I continued to fire at the large ships. I no longer had any idea what ships they were. A 8.22 p. m. we turned into a south-west course, but in the poor conditions of visibility and the confusion of battle now prevailing, I had no longer any correct grasp of the tactical conditions. At one time it flashed through my mind, "May it not be German ships that we are firing at?" Then the visibility, which varied from minute to minute but which on the whole was gradually growing worse, became somewhat better, and one could clearly recognize the typical English contours and the dark gray color of their paint. I am of the opinion that our light gray paint is better than the dark color of the English. Our ships disappeared much more quickly in the thin mists which were now drifting from east to west.

At 8.25 p. m., Lieut. v. d. Decken reported from the after conning tower: "Heavy hit in the fore part of the *Luetzow*; ship burning; much smoke." At 8.30 p. m. he reported: "Three heavy hits on the *Derfflinger*." One of these hits had struck the second 15-centimeter casemate gun on the port side, passed through the gun near the center, the fragments of the explosion killing or wounding the greater part of the casemate personnel. Frag-

ments of the explosion had also thrown the first 15-centimeter gun off its carriage and killed or wounded several men in the first casemate. The other heavy hits fell in the after part of the ship.

I now sought my target as far forward as possible at the head of the enemy line. I noticed that the *Luetzow* was now firing weakly. The fires raging in the fore part of the *Luetzow* made it almost impossible to direct the gunfire.

From 8.24 p. m. on I fired at the enemy battleships in a north-easterly direction. The ranges were short, 60 to 70 hectometers, but in spite of this the ships often disappeared from view in the thick mist resulting from weather conditions and the smoke from stacks and guns.

It was almost impossible to observe the points of fall. All the projectiles which fell beyond the target were practically invisible to us, and we gained a fairly correct idea only of the points of fall which were somewhat short. This helped one, however, mighty little. If the gun were again fired at the target according to such points of fall, the white columns of water were no longer visible and one knew absolutely nothing as to where one had really struck. I fired according to the measurements of the range taker in the gunnery station, Seaman Hanel, my trusted man for the past five years. Owing to the thick weather, the measurements were very irregular and incorrect. But as I was without observations, I was forced to fire slowly by these measurements. Meanwhile, we were receiving heavy and well-placed rapid fire from several ships simultaneously. It was obvious that the enemy could now see us much better than we could see him. To those who have ever been at sea this statement will seem ambiguous. As a matter of fact, however, the differences in visibility at sea in weather of this kind vary greatly. Persons on board a vessel enveloped in mist can make out a vessel silhouetted against a clear horizon much more distinctly than the latter can make out the vessel enveloped in mist. The position of the sun plays an important part in visibility conditions. In misty weather the ships which have their shaded side toward the enemy are much more plainly visible than those on which the light shines.

Thus it was that the battle became an unequal, bitter struggle. Several heavy hits fell with terrific force on our ships and exploded with a terrible report. The entire ship trembled in every joint at the impact of the shell. The commanding officer frequently swerved out of line to avoid the hail of shell. It was no easy firing.

This lasted up to 8.29 p. m.

At this moment the veil of mist lifted as if it had been the curtain of a theater. In front of us, in the middle of the clear portion of the horizon, in full view, and distinctly outlined, stood an enormous battleship with two funnels between the masts and a third funnel close up against the forward tripod mast. She was steaming at full speed on a course about parallel to our own. Her guns were aimed at us, and again a salvo burst forth which fully covered us. "Measurement 90 hundred," shouted Seaman Hanel. "90 hundred! Salvo—fire!" I commanded, and with feverish anxiety I awaited the result. "Over! Two hits!" cried Lieut. Stosch. I commanded: "One back! Good; rapidity!" and in 30 seconds after the first salvo the second left the guns. I observed two shorts and two hits. Lieut. Stosch shouted, "Hit!" Every 20 seconds now a salvo thundered forth. At 8.31 p. m.

the *Derfflinger* fired her last salvo at this ship, and then there took place before our eyes, for the third time, the horrible sight which we had witnessed in the case of the *Queen Mary* and the *Defense*. As with the other two ships, several enormous explosions followed each other rapidly, masts fell over, fragments of the ship whirled through the air, a huge black cloud of smoke rose toward the heavens, and out of the disintegrating ship coal dust was scattered in all directions. Flames swept over her, new explosions took place, and then our opponent disappeared from view in a black cloud. I called through the telephone, "The enemy has blown up!" and in the midst of the uproar of battle a thundering hurrah passed through the ship, which was repeated by all the telephones of the gun station and transmitted from battle station to battle station. I breathed a short, intense prayer of thanks to heaven, and called out to my man, "Bravo, Hanel: splendidly measured!" and then gave my command: "Change target to the left, on the second battle cruiser from the right!" and the battle went on.

Who had our enemy been? I did not spend much time wondering about this, but I had supposed the ship to be an English battle cruiser. I had designated her as such in determining my range as it appeared from the record made by the recorder in central. There was no time for discussing the type, so long as we were firing at the ship. There were only a few minutes during which we might have identified her. Only the officers and gun captains, together with the torpedo officers, had observed the ship when she flew into the air. The attention of the commanding officer and his helpers, the navigating and signal officers, was entirely taken up with the management of the ship in cruising formation. It was difficult to keep place behind the *Luetzow*, which was scarcely able to keep her position line.

In writing up the report of the battle afterwards, the majority of the officers believed that the vessel was a ship of the *Queen Elizabeth* class. I felt sure that she was a ship of the *Invincible* class, but I yielded the point, as I was not sufficiently certain. When we examined a fleet pocket manual and compared the silhouettes of the *Invincible* and those of the *Queen Elizabeth* class, the similarity was at once strikingly apparent. We therefore stated in our report of the battle that at 8.30 p. m. we had destroyed with our gun fire a battleship of the *Queen Elizabeth* class. Our service record in the report of the battle ran: "The vessel was blown up in the same manner as the *Queen Mary*, at 6.26 p. m." Reliable observation by the first and third gunnery officer and the first torpedo officer in the forward station, by the second and fourth gunnery officer and by the second torpedo officer in the after station, and by the spotter in the foretop "Ship of the *Queen Elizabeth* class."

The English prisoners stated at *Wilhelmshaven*, after the battle: "One of the *Queen Elizabeth* ships, the *Warspite*, listing heavily, had left the line and had withdrawn to the northwest. At 8 p. m. the English destroyer, *Turbulent*, picked up the wireless report that the *Warspite* had sunk.

On the basis of our report of the battle, and of this statement by the English prisoner, we then believed that the vessel destroyed by the *Derfflinger* had been the *Warspite*, and therefore reported the *Warspite* as the lost enemy ship instead of the *Invincible*.

We first learned of the destruction of the *Invincible* from the reports of the English Admiralty, and naturally she was added later to the list of losses reported. As a matter of fact, we had been fighting with the *Invincible*; it was the *Invincible* which blew up under our fire, and not the *Warspite*. English reports soon proved this clearly enough.

As early as 3 June, the following appeared in the *Manchester Guardian*: "The German Admiralty report of 1 June contains a detailed and very correct account of the English losses—with the exception that it mentions the name of the battleship *Warspite* instead of the battle cruiser *Invincible*." The *Times* report of 16 June, 1916, gives statements of the participants in the battle: "The *Invincible*, the flagship of Admiral Hood, the second admiral after Sir David Beatty, engaged the *Hindenburg*, and after a hot fight, in which, according to the accounts of some of our people, the *Hindenburg* received her deathblow, the *Invincible* sank beneath the waves."

The *Hindenburg* was at that time under construction; the *Derfflinger* was her sister ship, and everything thus agrees with the English account except the name of the ship. It was the *Derfflinger* and not her still unfinished sister ship, the *Hindenburg*, that had fought with the *Invincible*.

One of the two rescued English officers of the *Invincible* gave a very correct account, especially as regards the time of day of the gunnery duel between the *Derfflinger* and the *Invincible*. The *Times* of 12 June, 1916, contains the following statement regarding this engagement: "The father of one of the lieutenants who went down with the *Invincible* received a letter from the two surviving officers of the ship in which the following statement occurs: 'Your son was serving with the admiral and we were in the action with the battle cruiser *Derfflinger*. At 8.34 p. m. a frightful explosion took place, the ship broke in half and sunk in 10 or 15 seconds.' "

On 13 June, 1916, the *Times* reported: "A letter from the brother of Lieut. Charles Fisher stated: 'We learned from Lieut. Commander Dannreuther, the sole survivor of H. M. S. *Invincible*, that a shell struck in the powder room and produced a terrific explosion there. When Dannreuther returned to consciousness he was floating in the water; ship and crew had disappeared.' "

That the vessels which I fired upon from 8.24 p. m. on ranges of from 6,000 to 7,000 meters, were battle cruisers of Hood's squadron is shown by the official report of Admiral Beatty. He reports concerning the attack of the third battle cruiser squadron, consisting of the *Invincible*, *Indomitable*, and *Inflexible*, as follows:

"At 8.21 p. m. I ordered the third battle cruiser squadron to take its position at the head. This maneuver was splendidly executed by Rear Admiral Hood, who brought his squadron to the head during battle in the most typical manner, worthy of his long experience at sea. At 8.25 p. m. I changed course to east-southeast in order to support the third battle cruiser squadron which at this moment was only 73 hectometers from the leading enemy ship. They were pouring a violent fire into the squadron and forced it out of its southerly course farther toward the west."

On 5 June, 1916, a Reuter dispatch from Edinburgh (press telegram, 5 June) states: "When the battle had been going on for a few hours, the *Indomitable*, *Invincible*, and *Inflexible* appeared.

This portion of the battle was principally a duel between the heaviest guns. The *Invincible*, after fighting bravely and inflicting considerable damage on the enemy, met her fate and sunk."

I mention these English reports of the battle with the *Invincible* with so much fulness here in conjunction with my own account of the battle, because in the German reports hitherto published the question of whether the *Invincible* was destroyed by gun fire or by a torpedo was left open. For historical reasons, if for no other, I consider it necessary to establish the fact that the *Invincible*, as well as all the other ships which the English lost in the battle, were destroyed by gunfire.

Admiral Hood, commander of the third battle cruiser squadron who went down with the *Invincible*, was a descendant of the famous English Admiral Hood who won great renown as a strategist and tactician in the North American revolution under Graves and Rodney, and later as commander in chief in the battle of St. Christopher (1782). During the English-French war, lasting from 1792 to 1802, he commanded the Mediterranean fleet during 1793-94, and occupied Toulon in 1793.

Our heavy guns fired up to 8.33 p. m., according to the records kept by my recorder. At 8.38 p. m. we had turned sharply to the west. After the loss of their leader, the remaining ships of the third battle squadron did not again venture in our immediate vicinity. At 8.50 p. m. the entire ship was ordered to cease firing. A feverish activity began in an effort to extinguish the numerous fires in the ship. We observed a torpedo boat steer up alongside the *Luetzow*. The *Luetzow* was listing and was down deeply by the bow. Numerous clouds of smoke were pouring from the fore part of the ship. Admiral Hipper left the vessel. The torpedo boat cast off and steered for the *Seydlitz*. In passing the *Derfflinger* the admiral signaled: "Commander of the *Derfflinger* will take command until I am again on board ship." Thus it happened that our commanding officer was now leader of the battle cruisers, and he continued in this capacity until 11 p. m., when the admiral finally succeeded in getting on board another ship. This he had not been able to accomplish sooner as the battle cruisers had been almost continuously under enemy fire, steaming at high speed.

The *Derfflinger* herself now presented a pretty bad appearance. The masts and all the rigging were badly damaged by fragments of explosion, the antennae hung down in wild confusion so that we were able to use our wireless only for receiving. It was therefore impossible to send any regular messages. A heavy shot had torn away the armor plates of the bow, leaving an enormous hole at least 6 by 5 meters in size just above the water line. Water continuously flowed in through this hole when the ship pitched.

While we were steering to the west, the first officer came upon the bridge and reported the commander: "The ship must be stopped at once. The torpedo net has been shot away aft and hangs directly over port screws; it must be cleared away." The commander order: "All engines stopped." I scanned the horizon, far and wide, with my periscope. At this moment the enemy was nowhere to be seen. We were as yet only loosely in touch with the *Seydlitz*, the *Moltke*, and the *Von Der Tann*; now they hastened up and again took their prescribed positions.

It was a most dangerous thing to be compelled to stop here in the immediate vicinity of the enemy. But if our torpedo net should get foul of the screw we would be lost. How we had railed on board because we had not discarded these heavy steel torpedo nets, weighing several hundred tons. As we almost never anchored in the open sea, they were useless. Moreover they protected only certain portions of the ship against torpedo attack and at sea represented a very great danger, since in the suspended condition they greatly diminished the speed of the ship and were almost certain to become entangled in her propellers, which was equivalent to the destruction of the vessel. For these reasons the English had abandoned their torpedo nets shortly before the war. We did not do so until immediately after the battle of Skagerrak.

The boatswain and turret crew of the turrets *Dora* and *Cæsar*, under the leadership of Lieut. (junior grade) von Boltens-tern, worked like mad to raise the net, secure it with chains, and make fast all loose cables and chains. A few minutes later came the announcement: "Engines can run again." And we were once more immediately under way. The *Luetzow* had now left the line and was steering a course to the south at slow speed. The commander tried to signal to the other ships: "Follow the leader." But all means of signaling had been rendered useless. The signal yards were all damaged, the flags at the battle stations were burned, and the signal searchlights had been shot away. Our brave comrades in arms, however, followed without signal when the commander now led the battle cruisers on the north-erly course before the head of our main body.

The pause in the battle lasted until 9.05 p. m.; then shots were again suddenly heard, and once more there rang through the ship the order "Clear ship for action!"

The Fourth Phase of the Battle of the Skagerrak (9.05 p. m. to 9.37 p. m.)—The Battle Cruisers' Death Journey—Admiral Schøer Withdraws the Fleet from the Encircling Maneuver—Torpedo Boat Attacks—Getting Free of the Enemy.

In the phase of the battle that had gone before we had gone from triumph to triumph. We had learned the meaning of a naval battle in all its wild beauty. Now we were to discover its horrors. During the pause in the battle I had remained in the conning tower without removing my head telephone piece. "Where is the enemy?" I called, as I again looked through my periscope. "Several small cruisers off the port beam," was the answer. In order to spare the heavy guns for larger targets, I ordered Lieut. Hausser to fire at small cruisers with the 15-centimeter guns. He opened the fire at 7,000 meters. I meanwhile, searched the horizon, but as no other ships were visible, I again opened fire with the heavy guns on one of the small cruisers that had been reported to me. The enemy ships were once more just visible. I conducted a lively fire at them, and then observed that the ship on which I had aimed my guns was firing full salvos from her four double turrets. The outline of our enemy became clearer for a moment and I plainly recognized that a large ship was facing us, a dreadnaught of the largest type, with 38 centimeter guns. As I was looking they blazed forth.

The commander in chief had meanwhile realized the danger which threatened our fleet. The head of our fleet was surrounded

by a semicircle of enemy ships. Now, we certainly were done for. There was only one way of escaping from this tactically unfavorable position, that was to invert our line by countermarching. This maneuver, however, would have to be carried out unnoticed and undisturbed. The battle cruisers and torpedo boats must cover the movement of the fleet. The commander in chief, at about 9.12 p. m., gave the signal to the fleet to countermarch, and almost simultaneously he gave to the battle cruisers and torpedo boats the historical signal to attack the enemy. At 9.13 p. m. the signal men in our conning station read the signal aloud, and added thereto the explanation which stands after the signal in the signal book: "Ram the enemy! The ships commanded must attack without restraint!" Without moving an eyelid, the commander ordered: "Full speed ahead! Course southeast!" Followed by the Seydlitz, Moltke, and Von Der Tann, we first steered a course to the southeast, then, from 9.15 on, to the southwest, directly toward the head of the enemy line. An infernal fire now descended, especially upon the Derfflinger, as leading ship. Several vessels were firing at us simultaneously. I selected a target and likewise fired as rapidly as possible. At first the range which my trusty recorder in the central recorded were 120 hundred; then it decreased to 80 hundred. And still we continued to advance at full speed into this maelstrom of fire, at the same time presenting a magnificent target to the enemy, while he was scarcely visible to us. Lieut. Commander Scheibe, in his account of the battle described this attack as follows: "The battle cruisers which, during the transfer of Admiral Hipper, were temporarily commanded by the commanding officer of the Derfflinger, now devoted themselves with reckless zeal to bring the torpedo boats to the enemy line. A thick hail of projectiles fell upon us throughout our course." Salvo after salvo fell in our immediate neighborhood, and shell after shell struck our ship. Those were exciting moments. I no longer had any means of communication with Lieut. von Stosch, the telephone and speaking tube connections with the foremast having been shot away. This compelled me to depend solely upon my own observations of the fall of the shot in firing.

Up to this time I had continued to fire with all four heavy turrets, but at 9.13 p. m. a serious catastrophe occurred; a 38-centimeter shell penetrated the turret armor of Caesar turret and exploded inside. The brave commander of the turret, Lieut. von Bolterstein, lost both legs, and almost all the gun crew were killed. A charge was ignited in the turret by fragments of the explosion. The fire from the burning charge advanced to the ammunition hoist, where two more charges were ignited, and from there passed on into the handling room, where likewise two more charges were ignited. The cartridges burned with sheets of suffocating flames, which arose into the heavens far above the turret, but they merely burned and did not explode, as the charges of our enemy had done. That was the salvation of our ship. But in spite of that, the burning of the charges was disastrous in its effect. The awful suffocating flames destroyed everything that came within their reach. Of the 78 men making up the turret crew only 5 succeeded in saving themselves by climbing through the hole provided for the ejecting of empty cartridge cases, some of them being severely wounded. The remaining 73 men died together in this catastrophe, meeting a hero's death in the full performance of duty while carrying out the orders of the turret commander.

A few moments after this catastrophe, a second occurred. A 38-centimeter shell landed on the roof of the turret *Dora*, penetrating it, and in this case also exploding inside the turret, creating a new scene of horrors. With the exception of a single man who was hurled out of the turret through the manhole by the pressure of air resulting from the explosion, the entire turret crew, including the personnel of the ammunition room, in all 80 men, went together to their death. Under the leadership of Gun Capt. Arndt, in command the turret *Dora*, the crew had stuck to their guns with heroic courage to the last second. Here again the burning gas ignited the charges not incased in their protective packings, the flames extending even to the magazine located deep down in the ship. Large tongues of flames mixed with yellow masses of smoke shot up toward the heavens from both after turrets like two gruesome funeral torches.

At 9.15 p. m. I received the report from the main central station: "Danger from gas in main central. Central must be vacated!" This was somewhat startling. The ship must be in a pretty bad condition when the poisonous gases had made their way into the main central which was so carefully isolated. I gave the order: "Switch to the forward station!" and immediately ascertained that the gun-control apparatus had actually been connected up with the forward station before the central was vacated. Now I could conduct the gunfire only by calling out my orders through a speaking tube to an order transmitter situated below the grating on which I stood. He repeated the orders through his telephone and telegraph apparatus, directly to the gun turrets. This greatly increased the noise of voices in the gunnery station, but it, was at any rate still possible to direct the fire. Hit after hit fell upon the ship. The enemy's gunfire was excellent. My heart contracted when I thought of what must be taking place inside the ship. We in the armored gun station were pretty well off. My train of thought was suddenly interrupted. All at once it seemed as if the whole world were in the throes of destruction. A fearful rushing, a violent detonation, and then everything about us was black; we felt a terrific shock; the whole turret rose upward as if struck by a giant hand, and then fell back trembling to its old position. A heavy shot had struck the gun station about 50 centimeters from where I stood. The shell detonated but did not succeed in penetrating the thick armor, because it had struck at an unfavorable angle. Nevertheless it had torn away huge pieces of the armor. Poisonous, greenish-yellow gases floated in through the outlook slits into our station. I shouted: "Gas masks down!" and immediately each man pulled his gas mask down over his face. I now conducted the fire in a gas mask, which made it difficult for me to make myself understood. However, the gas soon passed away, and we cautiously raised our masks. We made sure that the gunnery apparatus was all in order. Nothing was destroyed. Even the delicate direction indicators had marvelously escaped, thanks to the manner in which they were installed on springs. A few fragments of explosion had entered through the outlook slits into the forward control station and had wounded some of the men there, among them the navigating officer. The heavy armored door of the command station had been sprung from its place by the great shock and now stood wide open. Two men endeavored in vain to force it back, but this was impossible as it was jammed too tight. Then unexpected assistance arrived. Once more we heard a terrifying rushing and crashing, and like a thunderbolt a 38-cen-

timer shell exploded under the bridge. Whole deck plates were thrown into the air. A furious blast swept everything that was not nailed and riveted fast overboard. In it vanished, for example, the chart house with all the charts and apparatus, and last, but not least, my beautiful cloak, which I had left hanging in the chart house. And a very remarkable thing had also happened; the armored door of the gun station had been thrown back into position by the terrific shock of the bursting 38-centimeter shell. Truly a polite fellow, the Englishman. As he had opened the door for us, he also closed it again. Had it all been intentional? At any rate, we were very well pleased to have our door closed for us.

Once more I looked for the enemy through my periscope. The salvos continued to fall upon us, but we could see almost nothing of the enemy, who still surrounded us in a huge semicircle. All that we could see distinctly was a mass of monstrous, red-gold flames bursting from the muzzles of the guns. It was but seldom that one caught a glimpse of the ship's hull. I measured the range by the flashes of the guns. That was the only way in which to determine our distance from the enemy. And without great hope of doing the enemy much damage, I had fired salvo after salvo from the two forward turrets. I could feel how our firing steadied the nerves of the men. If we had ceased our firing at this time, the whole crew of the ship would have been overpowered by despair, for everyone realized that a few minutes more and all would be lost. So long as we kept firing, however, things did not seem quite so desperate. The secondary battery also continued firing; but of the six guns on the side, only two remained in commission. The barrel of the fourth gun was burst wide open through an explosion in the tube, and the third gun was shot to pieces. The two 15-centimeter guns remaining in commission kept up a lively fire together with us.

Unfortunately, the aim indicators in the Bertha turret now broke down. This left me with but a single turret which I could train on the enemy by means of my periscope. The train of my periscope, as indicated by the control apparatus in the gunnery central, was continuously called to the Bertha turret; this was a certain guide for the turret commander, but naturally did not suffice for ships constantly in motion.

Furthermore, the turret commander could not continuously discern the enemy with the turret telescope. All that could really be seen were the fiery flashing eyes which the monster opposite opened from time to time, namely, when a salvo was discharged. I confined my fire to a ship which alternately discharged double shots out of two turrets. The mouths of the guns then looked like two blazing, wide-open eyes. Suddenly, it occurred to me that I had seen something like this before—Sascha Schneider's picture, *The Feeling of Despondency*, had awakened in me a sensation similar to the one I was now experiencing. It represented a black monster of vague outline sleepily opening and shutting his fiery eyes fixed on a fettered man, ready for the deadly embrace. Our present condition seemed very little different from this to me. Also our struggle with the monster must be fought to the end. The Anna turret, under the leadership of brave Gun Capt. Weber—I had sent the turret commander to the after gun station to replace the fourth gunnery officer who had been detached—continued to fire unflinchingly; and likewise the valiant

"Schulzburg," the leader, however, frequently firing at a different target from the one ordered. Without any aim indicator it was impossible to have both turrets fired always at the same fire-spitting muzzle of the enemy.

At 9.18 p. m. we received orders by wireless from the Commander in chief: "Maneuver for the head of the enemy line." This meant that we should no longer charge the enemy directly, but that we should keep up a running fight with his leading ships. We immediately turned to a course west by south. Unfortunately the enemy now stood so far astern that I could no longer see him in the forward station, and the fire control must therefore be transferred to the after station. The necessary switching could, however, be done only in the central station. This station could now no longer be used. It thus became impossible for the moment to control even the two forward turrets. I gave the order: "Turrets independently." For sometime the two turrets fired independently under the direction of their commanders. I observed that the Bertha turret quickly got the range of the target dead astern and kept it under a lively fire. The turret Anna also soon began firing. For some time the enemy stood directly astern of us so that the forward turrets could not reach him, as their angle of train extended only up to 220°. Under these circumstances we could no longer defend ourselves. By turning out, the torpedo officer fired a torpedo at 80 hectometers. Our torpedo boats, which had thus far remained behind us, also joined in the attack. Several flotillas advanced simultaneously. A thick cloud of smoke arose between us and the hostile monsters. A wild tumult of battle again arose before our eyes. It was difficult to distinguish friend from foe. One torpedo boat after another plunged into the smoke, disappearing from view, and then reappearing again for a moment. Others emerged, on their way back, having fired their torpedoes. The flotillas reassembled under our protection and then went forth a second time for the attack. The enemy now disappeared from view, and his shell ceased to fall upon us. We drew a breath of relief. The hostile fire thundered and roared as before but we were no longer a target for the guns. As my recorder had to leave central at 9.15 p. m. with the rest, no records of this part of the battle could be kept.

At 9.23 p. m. the announcement came from central: "Main central again manned." I learned later that the trouble had been caused by thick masses of yellowish gas making their way into central through the speaking tubes from the Caesar turret. In the excitement of the battle no one had noticed it at the time. Suddenly the entire central was filled with it. Everyone put down his gas mask. The order transmission officer, Lieut. Hoch, ordered: "Switch gun control apparatus to forward station," and then had the central vacated. Immediately thereafter, the mechanic, Schoening, courageously, and with his gas mask securely adjusted, returned to the central. He felt his way through the poison-laden gases which entirely filled the room to the speaking tubes, and closed them with wooden plugs. Meanwhile the electric ventilation was started and in a few moments it had become clearer in the central, the gases were removed by suction, and the order transmitters returned to their stations. It had been absolutely necessary to cease operations for a time.

At 9.37 p. m., as there was no longer any hostile vessel in sight, the order was given to suspend action. All gun crews were summoned on deck to extinguish fires. The forward con-

ning station was burning and enveloped in smoke, and the 15-centimeter gun crews were ordered to extinguish the fire. The gun duel came to a halt, but a stubborn fight against water and fire was going on inside the ship. Notwithstanding the fact that everything possible of an inflammable nature had been removed from the ship, the fire still found something to feed upon, especially in the linoleum, wooden decks, clothing, and oil paint. Toward 10 p. m. we had practically mastered the hostile elements, the fire still smoldering only in places. The Caesar and Dora turrets were still smoking somewhat; thick yellow gas continued to flow out of them at intervals, but this gradually ceased after the ammunition rooms were flooded. None of us would have believed that a ship could withstand so many heavy hits. After the battle was over, we verified about 20 hits with 38-centimeter shell, and an equal number of heavy hits of small caliber. The resisting power of our ship together with the enormous destructive effect of her armament was a brilliant tribute to the builders of our navy, especially to the genial Grand Admiral von Tirpitz.

The Luetzow was no longer to be seen. At 9.20 p. m. this had been recorded in the after gun station: "Target covered by thick smoke of Luetzow." After that the burning ship disappeared in the constantly increasing gloom. Our battle comrades, the Seydlitz, Moltke, and Von Der Tann, were, however, still with us. They, too, had been severely punished. The Seydlitz in particular had suffered. Huge flames were leaping upward from one of her turrets. Fires were raging in all the ships. The bow of the Seydlitz lay deep in the water. Admiral Hipper, when he came alongside the Seydlitz in his torpedo boat, had learned that she no longer possessed her wireless outfit and that several thousand tons of water had already entered the ship. Then he wanted to be taken on board the Moltke, commanded by Capt. von Karpf, the former commander of the Hohenzollern. But as he was about to climb on board, the ship received such an inferno of shells that the commanding officer could not reduce his speed. The Derfflinger also was asked by Admiral Hipper what damages she had sustained. When we replied that we were now firing only two 30.5-centimeter and two 15-centimeter guns on the starboard side, that we had 3,400 tons of water in the ship, and that our signalling apparatus was destroyed except our radio receivers, he decided not to come on board. He finally boarded the Moltke as soon as the conditions of the battle made this possible. Nevertheless the commander of the Derfflinger had continued to direct the battle cruisers during the entire four phases of the battle. The name of Capt. Hartog is inseparably connected for all time with the death voyage of the battle cruisers of the Skagerrak. A great number of men had been killed on all our battle cruisers. Hundreds had met heroes' deaths in this great attack. But our task, in common with that of torpedo-boat flotillas in covering the retiring maneuver of the fleet, had been brilliantly performed. Admiral Scheer had been enabled to maneuver the fleet fully intact from the threatening encircling. The route over which the fleet retired can be seen in sketch 2. We note that from 7.48 p. m. the fleet steered a northwesterly course in echelon formation and then in column a northeasterly course up to 8.35 p. m. At 8.35 p. m. the fleet had already turned into a westerly course. Sketch 2 shows the path over which the fleet had traveled. We see from it that up to 7.48 p. m. the fleet had steered in a northwesterly course in echelon formation, and then, up to 8.35 p. m., a northeasterly course in column. At 8.35 p. m.

the fleet had already turned into a westerly course, in order not to leave the burning Wiesbaden, which was continuously under the heaviest fire, in the lurch; after this turned back into an easterly course, and then, at 9.17 p. m., completed the counter-march on the westerly course, which had been ordered at 9.12 p. m., and withdrew under the protection of the battle cruisers and the torpedo-boat flotillas, from the surrounding semicircle. The ships farthest forward, the vessels of the third squadron, came into the battle when they engaged the vessels of the Queen Elizabeth class at 7.48 p. m.; and then again when they came within reach of the guns of the encircling English ships upon completing their advance on the eastern course at 8.35 p. m. and at 9.17 p. m. The first squadron occupying a position at the middle of the line did not use its guns at all during the daytime battle, but had to bear the burden of the night engagement. The second squadron, in consequence of its slow speed, had remained several nautical miles in the rear. By chance, however, it came into the engagement during the last phase of the battle, of which I shall have more to say later on. In consequence of the tactical character, arrangement, and conduct of our fleet, the English ships engaged only our most modern and efficient vessels in the principal actions of the battle. Only in this way could it have happened that we absolutely lost no ship during the battle itself—the severely damaged Luetzow was abandoned by her crew on the day after the battle and then torpedoed by us ourselves—while the English lost three of their best ships. This fact is a brilliant witness to the consummate tactical skill of Admiral Scheer and his gifted chief of staff, Rear Admiral von Trother.

The Fifth Phase of the Battle of the Skagerrak (from 9.37 p. m. to 10.35 p. m.)—And the Night of June 1—The Last Gunnery Duel—The Night Battle—Sinking of the "Pommern."

A pause in the battle followed the strenuous efforts of a charge upon the enemy which lasted until 10.22 p. m. On board the *Derfflinger* we began preparations for the night at this time. Almost all of the searchlights had been destroyed. On the starboard side we had only one left; on the port side, two. "Heinzelnachen" and his helpers had all they could do to execute in a measure all the demands made upon them. I remained on the bridge in constant expectation of coming upon the enemy again. There was a man at every periscope who searched the horizon, and all the telescopes were in use.

At about 10 p. m. we sighted our first squadron steering a southerly course. Our commander, who still had charge of the conduct of the battle cruisers, led our formation toward the head of our main body in order to take up a position further forward. The other battle cruisers followed the *Derfflinger* without any signal. As we were executing this maneuver we and the first cruiser suddenly came under heavy fire from the southeast. It was already growing dark. The gloom had increased, rather than diminished. "Clear ship for action!" again sounded throughout the ship, and in a few seconds I had the *Anna* turret trained on the target and a shot was fired. The prevailing darkness made it impossible to bring the *Bertha* turret to bear on the target. I fired with the *Anna* turret as rapidly as possible, but even so there was a pause. A heavy hit struck the *Anna* turret and bent one of the packing disks of the traverse circle so that the turret jammed. Our last weapon seemed about to fall from our hands.

Again Capt. Weber, with his customary quick decision, ran out of the turret and with the aid of some petty officers and men of the gun crew cut away the packing disk with axes and hatchets and got the turret clear again. In this way we could at least fire a shot now and then. I fired almost exclusively with an estimated range. Only rarely did the range taker succeed in measuring the distance from a flashing. I fired at range of 80 hundred, 60 hundred, and 100 hundred and thereabouts. It was impossible to observe the flash. Once more the station had become extremely uncomfortable. Then help arrived from a source where we would have least expected it. Our second squadron, the old ships of the Deutschland class, had stood at the head of the fleet after the countermarch on the southerly course. Admiral Scheer now considered the moment opportune to arrange the fleet in such a way as to be tactically correct for advance toward the south. The second squadron, in consequence of his command, took up its position at the rear of the two modern squadrons. The chief of the second squadron had just executed this order by leading his squadron westward past the remainder of the fleet and also past us. This brought him between us and the enemy, who was pressing hard, and who suddenly saw seven large ships advancing against him at high speed. At the same time our indefatigable torpedo boats once more joined in the attack. That was too much for our foe. He turned away and disappeared in the gloom. May we never see him again. A great joy filled our hearts as we suddenly saw ourselves free. I saw all the good friends of my former squadron approaching; the brave Hessen, on which I had spent five years; the Pommern, the Schleswig, the Holstein, and others. All kept up and received a lively fire which lasted for a short time. The enemy, however, had had enough. If he had dreamed what kind of ships they were, I do not believe he would have turned away. They were, however, the celebrated German "five minute" ships, for whose destruction the English claimed five minutes would suffice. Now, however, he bravely avoided them.

At 10.31 p. m. my trusty recorder recorded the last shot fired from the heavy guns of the Derfflinger with a deflection of 244° and a range of 75 hundred. The long northern day came to a close, and the short night lasting from 11 p. m. to 2 a. m., began. The battle cruisers received the order for the night: "Take position at end of line." We therefore had the honorable task of protecting the rear of the fleet on the south, while cruising. I do not know where the Seydlitz and Moltke were during this night. The Seydlitz, seriously damaged, had already been fighting desperately to keep herself afloat. Only by the greatest efforts was it possible for the crew of the ship, under her valiant commander, Capt. von Egidy, and her efficient executive officer, Lieut. Commander von Alvensleben, to get the ship into Wilhelmshaven two days after the battle.

Only the Derfflinger and the von der Tann took their positions at the end of the line on this night. We no longer considered ourselves a very efficient rear guard. Our starboard side was our good side. All six 15-centimeter guns on that side were still intact; but a single searchlight was hardly sufficient. On the port side we still had only two 15-centimeter guns capable of firing. Hence we had to make strenuous efforts to attack the English torpedo boats on the starboard side so far as possible. There we could take good care of them.

As the heavens were overcast, the night at last became dark. We officers had now left the conning tower and took our stations on the bridge. The commander joined us. He shook my hand heartily and said: "That was well done." These words meant a great deal to me, as has every mark of recognition which I have later received. As it was beginning to grow cool, he ordered a bottle of port. The glasses were filled, and we officers drank to the day. I sent my man below decks to my room to see how things were down there and to bring me another cloak. Haenel came back with the cloak and reported with a beaming face: "The Herr Captain's room is the only whole one left. All the others are completely destroyed." In looking at his smiling countenance I could but think of the old lines:

Oh, St. Florian!
Protect my house and let the others burn!

As we were the next to the last ship in the long line, it was to be expected that we would escape attack by the torpedo boats, which must always direct their attacks at the vessels heading the line. As a matter of fact only one English destroyer found the way to us during the entire night. All the other destroyers were driven off by the vessels ahead of us. I can not tell very much about these night engagements, as we were too far away. Firing was kept up, however, during the entire night. One must admit that the English torpedo boats attacked us over and over again with marvelous spirit. But they accomplished practically nothing. The only German ship that was sunk during the night was the small cruiser *Frauenlob*, and she was not sunk by torpedo boats but by an English cruiser which had overcome her in a gunnery duel and then sent a torpedo into her side. Not until dawn did the English torpedoes meet with any success. An English destroyer succeeded in hitting and destroying the *Pommern* with torpedo fire at long range.

From our position we were able to quietly watch the battle as it was fought out, at times at a great distance from us. Searchlights flashed, illuminating torpedo boats as they advanced at maximum speed. Both ships and torpedo boats used their guns; the huge splashes were lighted up and the thick clouds of smoke rolled past the ships and boats. All details escaped us. Nevertheless, the outcome of the battle was plain to us, when one burning, glowing vessel after another drove past us. I could but think of the living torches which the Romans in their gruesome orgies had running about while burning, for their entertainment. All iron parts were red hot. The boats looked like particularly fine golden red filigree work. The reason why the fire spread so rapidly over the English boats was that they were fitted for oil firing only. The oil ignited by the gunfire spread quickly over all parts of the deeply rolling vessels. It seemed as if at least 10 boats and ships drove past us in this condition. We looked at them with mingled feelings, for we were not absolutely certain that some of them might not be German boats. As a matter of fact, however, no German boat was destroyed that night. Our boats were cruising in search of the enemy fleet. It is a strange and almost incredible thing that our boats spent the night searching for the English main body and did not find it, although its point of departure was correctly known.

When the firing forward became somewhat quieter I heard, as I stood beside the commander, the noise of a turbine torpedo boat approaching at high speed. It was on the starboard side.

and suddenly a black object emerged at about 4 points to starboard. Shall we light our single searchlight and thereby betray our presence, or shall we wait until the destroyer covers us with his searchlight in order to determine our position before firing his shot? I hastily advised the commander not to use our searchlight. He agreed with me, and the destroyer rushed past us. He was quite near, only 300 or 400 meters away, but he did not use his lights and fired neither gun nor torpedo. The ship following us, the *Von der Tann*, did exactly as we did. As the gunnery officer told me later, they also feared that the flash of their searchlights would bring the whole swarm of torpedo boats down upon them. Had they not seen us on board the English destroyer? Had he fired all his torpedoes? Had he already been under such telling fire that now he thought of nothing but to get away? I do not know. "Ships that pass in the night."

Thus the night wore away and morning dawned. At 2.15 a. m. a burning ship drifted past us; probably the English armored cruiser *Black Prince*. The entire ship was aglow. It must have been sometime since anyone remained alive on board. At 3.10 a. m. we heard two great detonations to port, but we could not discover what had taken place. We had to stop many times because the entire line ahead of us got into disorder, owing to the numerous torpedo boat attacks. Vessels in turning out to avoid the attacks and in advancing against the enemy boats, left their line, described circles, and then had to push into line again wherever they could. Thus it was that the *Nassau*, which originally had been the second ship of the entire line, gradually became the last ship in the line, and therefore immediately ahead of us. It was no easy task for our navigating officer and the watch officer to keep the ship always at the right distance from the line so that we should not lose our place in the darkness.

At the first appearance of dawn we believed with certainty that we were about to enter battle once more with the entire English fleet. All preparations were made for the day's encounter. The direction indicators of the *Bertha* turret were again put in order by *Heinzelmaenchen* and his faithful helpers.

We then assembled on the bridge and gazed into the night and into the creeping dawn. The torpedo attacks seemed to have ceased. Suddenly—it was about 3.50 a. m.—we heard a loud detonation, and an enormous shaft of fire arose before our eyes toward heaven. From the distance it looked like a giant sheaf of fire from a brilliant pyrotechnic display. We noticed that the two ships ahead of us were turning out with their rudders hard to port. What had happened ahead? What catastrophe had taken place? Our ship continued to cut the waves. We held our course, and so passed the place where the explosion had taken place. We looked all about us to see whether any men or pieces of wreckage were floating in the water. There was nothing to be seen. As we passed over the spot where the catastrophe occurred we could not form the slightest idea of what had happened, and yet only a few minutes before the *Pommern*, a battleship of 13,000 tons, had passed. An English torpedo boat had sneaked up to the very limit of visibility and torpedoed the *Pommern*. The ship must have been blown to atoms, as a few minutes later not the least trace of her was to be seen. My jolly friend and comrade, Lieut. Commander *Elle*, met a hero's death on board the *Pommern*. As gunnery officer he had always taken such pains to stow the ammunition so as to be safe from torpedo

attack, and now it had all counted for nothing, for a torpedo must certainly have struck an ammunition room. We did not know until several days later that it was the Pommern which had been blown up.

At 4.10 a. m. the second squadron, which was preceding us, began to fire. We sounded the alarm "Clear ship for action," for we felt certain that a great decisive battle was at hand. But, as it turned out, it was only an English destroyer which had ventured to near and been fired upon. Perhaps it was the same one that had a short time previously torpedoed the Pommern. At any rate she got rough handling now. The destroyer, which was only a short distance from us, was set on fire before our eyes and became lost in the gruesome procession of living torches.

Meanwhile the sun had risen. On our ships hundreds of binoculars and telescopes searched the horizon, but nowhere was there any trace of the enemy. The fleet continued to the south. and in the afternoon of June 1 we entered Wilhelmshaven. Our ship was very badly damaged, and at many places everything had been converted into a mass of debris. The vital parts, however, had not been struck. The engines, boilers, steering arrangements, propeller shafts, and most of auxiliary machinery were practically intact, thanks to the heavy armor. The engine rooms had been filled for a long time with poisonous gases, but by using their gas masks the engine personnel—even though some of them were lost—had been able to carry on. The entire ship was strewn with thousands of fragments, large and small, resulting from the explosions. Among these fragments we found two 38-centimeter caps of projectiles which were almost undamaged; huge pieces in the form of large buckets, which later were used in the commander's cabin and in the officers' mess as champagne coolers, even though we could scarcely believe that they had been thrown on board by our English opponents for this purpose. The armor plate had been perforated in several places, but the leaks had always been stopped up or we had been able to confine the inflowing water to small compartments. At Wilhelmshaven we buried our dead, almost 200 from the Derfflinger, who now rest in honor in the cemetery there.

On 4 June the Emperor inspected our ship and she was then docked at Kiel for a six months' overhauling. She was again ready for battle in December, 1916, after many repairs of various kinds, including her guns. The battle of the Skagerrak, however, proved to be the last meeting between our ship and the enemy, at least so long as the flag to which we had sworn our allegiance floated at her stern. This proud ship now rests in the Bay of Scapa Flow at the bottom of the sea.

Observations on the Battle of the Skagerrak.

At sunrise on the morning of 1 June, the German fleet was standing off Horn Reef, at the same latitude, therefore, as the Danish city Esbjerg. When we discovered far and wide nothing of the enemy, I admit frankly that a load fell from my heart; for with our disabled ship, and especially with our crippled battery, we could have made but a poor showing against a dreadnaught with her guns intact. I had already fired almost all the ammunition for the Anna and Bertha turrets, and the rest of the ammunition in the Caesar and Dora turrets could not be utilized, as these turrets were still filled with poisonous gases, and the

ammunition rooms were flooded. I regretted from the bottom of my heart, for the sake of our fleet and the Fatherland, that the decisive battle was not fought then. This was undoubtedly a great grief and a disappointment for Admiral Scheer, our commander in chief. It would have been a very easy matter for the English to have offered us battle in the early morning. They had kept in touch with us during the whole night by means of their cruisers and torpedo boats. The English commander in chief was therefore kept constantly informed by radio concerning our every movement. It would have been a most fortunate thing for the Fatherland if an engagement had occurred at that time off Horn Reef, which was a comparatively short distance from Heligoland. To judge by what we saw on 31 May, many of the English ships must have been absolutely destroyed, and it must have required an enormous expenditure of ammunition to put the German dreadnaughts entirely out of action. If Jellicoe had sought a decision off Horn Reef on 1 June, the English Navy would doubtless have been forced to yield her place as the strongest navy of the world to America. I willingly admit that the complete destruction of Jellicoe's fleet on 1 June was not to be thought of; but, as one fully informed concerning our ships and of naval armaments and also well informed concerning the English ships and their armaments, and on the basis of my experience in the battle of the Skagerrak, I think I can say with certainty that a naval engagement between the English and German dreadnaughts fought to an absolute decision, would have cost the enemy a very large number of his capital ships.

On 31 May it was not possible for Admiral Scheer, after his maneuver of withdrawal from the "lion's claws" to again deploy his fleet for battle in a manner that would be tactically favorable. A night engagement between two fleets of such power was an impossibility. In spite of all means of recognition provided for battle in the darkness, the action would have unavoidably been a cruel melee, a rending of ship by ship without a knowledge of whether it were friend or foe. But even if we, like "fearless gamblers" had endeavored to bring about a night battle, the English fleet must have avoided it. She would have lost in a night engagement all the advantages of her numerical superiority, her greater speed, and her long-range guns; everything would have been left to blind chance. Jellicoe did perfectly right in withdrawing at nightfall and in bestowing his squadron during the night in such a manner as not to be discovered by our torpedo boat flotillas systematically searching the locality where the battle had been fought. Jellicoe, furthermore, did perfectly right from the strategic point of view in not presenting himself for battle on 1 June. With the employment of the English fleet as a "fleet in being"—that is to say, by the mere fact of its existence—it had fully performed the duty thus far assigned to it. The battle of the Skagerrak did not for a moment interrupt the pressure exerted by it as a "fleet in being." If Jellicoe had not engaged in the battle of the Skagerrak on 31 May, and in order to keep his fleet undamaged had instead withdrawn to his port of sortie at Scapa Flow, we would have been able to carry out the task assigned to us by a commerce destroying warfare in the Skagerrak and the Kattegatt, and would thus have had control of the North Sea for a long time. The execution of our task, however, was frustrated by the battle of the Skagerrak. But as Jellicoe did not attack our fleet as it was steaming toward the German mine fields and home ports, he did not for a moment surrender

the mastery of the sea. To what end then in this strategical game of chance should an additional move be made when his position was already such that the checkmate of the opponent could but be the result? Jellicoe withdrew to Scapa Flow. Later, when he made Beatty the chief of the fleet in his place and was made a lord by his King, he took the name of "Viscount of Scapa." Many a person in Germany and in England laughed at the idea that an admiral should take his name from a desolate spot where his fleet had lain continuously at anchor for almost four years. Nevertheless this four years of idleness on the part of the English fleet contributed decisively to the fact that our entire navy was forcibly conducted to this same Scapa Flow and that it now lies at the bottom of the bay there. What a triumph for the "Viscount of Scapa." As the confidence of the English in victory was severely shaken after the battle of the Skagerrak, Churchill published a series of articles in the October number of the London Magazine on the war by land and sea. What he says in these articles concerning the war at sea and the battle of the Skagerrak is in my opinion not correct. More's the pity. We could but draw the following conclusions at that time: the English fleet presented itself for battle outside our mine fields and at a respectful distance from our submarine bases and coast defense. We, however, were forced to seek battle if only to make an attempt to free ourselves from the iron clutch with which England was strangling us. Hence we were compelled to seek the English fleet out on its own coast and engage it there.

In opposition to this, it has been said that the submarine warfare could only be carried out with an intact, high-sea fleet; that our naval harbors would have been hopelessly blocked if we had lost our fleet. The answer to this is that, in the first place, a battle with the enemy fleet was not equivalent beforehand to the loss of our entire fleet. The Skagerrak could be cited as proof of this. In the second place, the cruisers, old battleships, and torpedo boats, together with our submarines, mine layers, mine sweepers, airships, flying machines, and coast defenses, that would have been left to us in any case, would have sufficed for the prosecution of the submarine warfare. Furthermore, we still had the Kattegatt as a port of sortie for our U-boats. The submarine warfare had been conducted in Flanders without the fleet, under much more difficult conditions than those in the North Sea. A decisive battle on the high seas would indeed have made the submarine warfare unnecessary, and would have brought the war to a speedy end.

I do not want to detract from our joy at our partial victory over the English fleet at the Skagerrak by these reflections, but it turned out that this victory—like all our others on land and sea—did not constitute a final victory for the German people. That it was like a chalybeate bath for the fleet and gave the German people new strength and confidence, contributing greatly to their prestige, there can be no question. It was a bad day for England as we sent 10,000 English seamen, together with the proudest of the English ships, to the bottom of the sea, while scarcely more than 2,000 German sailors had to yield up their lives for their victorious flag.

The extracts from Churchill's articles in the London Magazine (autumn, 1916) were published in a special edition of the *Fremden Presse*, of the News Bureau of the Imperial Navy Office.

I bring my narrative of the greatest day at sea which we Germans have ever experienced to a close with the wish that my little book and Churchill's article may be the means of enlightening many Germans as to the enormous influence the control of the sea has exerted on the history of the world, and will continue to exert for all time to come. And I express the hope that in coming years many Germans, proud of being Germans and sailors, will let the sea wind whistle in their nostrils.

It is true that we have been a poor nation. It is true that we have been greatly humiliated in our national honor. But because of that we will permit no one to take from us the courage for new deeds. Let us bear in mind the maxim:

Money lost—nothing lost!
Honor lost—much lost!
Courage lost—all lost!

II NOTES FROM O. N. I. PUBLICATIONS

OPERATIONS

Analysis of Torpedo Firing in the Battle of Jutland.

Torpedoes Fired at the Enemy in the Battle of Jutland.

An analysis and summary of all the torpedoes fired by British ships and vessels follows:

“Probability” figures based on peace practices are given as a comparison, principally as an indication of the relative ease or difficulty of the different shots. These chances, of course, take no account of bad runs or successful avoidance of torpedoes. The higher figure given in some cases is that for a line of big ships, 2½ cables apart; the lower figure that for a single ship shot. It is interesting to note that the number of hits claimed corresponds very closely with the “probability” for single ship shots.

The estimate of actual hits is based on information available, necessarily by no means reliable. A comparison of the reports from British individual ships would give about 18 hits instead of the 13 given in the list below. In the latter number no account is taken of the possibility that more than one hit may have been made on the same ship; there is, however, no confirmation that more than one hit was obtained on any ship. The estimated number of actual hits is therefore considered to be, if anything, on the low side.

SUMMARY OF RESULTS

	Torpedoes Fired	Hits Claimed	“Proba- bility”	Actual hits		Percentage of Certain and Prob- able
				Certain and Probable	Possible	
Day.....	46	9	9 to 17	4	2	8.7
Night.....	39	18 to 20	20	7	(?)	18.0
Total.....	85	27 to 29	29 to 37	11	2	13.0

Some of the other claims may ultimately be upheld, but there is at present no evidence that further hits were obtained except from British reports; in some cases two or more hits may have been obtained on one ship, which in this summary are counted as one only.

Approximate Allocation of Hits.

Owing to conflicting reports as to the times at which enemy ships, known to have been torpedoed, were actually hit, and to

difficulties in obtaining reliable information as to ships torpedoed which subsequently reached harbor, it has been found impossible to allocate the hits claimed with any degree of certainty. In the cases of ships severely damaged, it is rarely possible to obtain reliable evidence as to the respective share of guns, mines, and torpedoes in the infliction of the damage.

The following four ships are definitely known to have been hit by torpedoes and to have subsequently sunk:

Battleship	-----	<i>Pommern.</i>
Light cruisers	-----	<i>Frauenlob, Wiesbaden, Rostock.</i>
The other German vessels sunk were:		
Battle cruiser	-----	<i>Luetzow</i>
Light cruiser	-----	<i>Elbing.</i>
Destroyers	-----	<i>Five</i>

The *Luetzow* is reported, on rather doubtful authority, to have been disabled by a torpedo about 6 p. m. and sunk by the enemy in the early morning.

The *Elbing* was severely damaged in collision with a German battleship while avoiding a torpedo, and subsequently sank.

As to the five torpedo-boat destroyers, there is no definite evidence except from British reports. Petard claims to have torpedoed one.

It has been reported that the following seven ships, which are known to have reached harbor, were struck by torpedoes:

Battleships	-----	<i>Markgraf, Rheinland, Nassau, Westfalen</i>
Battle cruiser	-----	<i>Von der Tann.</i>
Light cruisers	-----	<i>Muenchen, Stettin.</i>

It is thought in several instances the names of these ships may have been wrongly given, as other evidence indicates that the period during which certain of the ships named were under repair were considerably shorter than one would expect in the case of a ship seriously damaged below the water line.

It is, however, considered likely that, although the names of the ships may have been given erroneously, the number of ships in each class damaged by torpedoes is approximately correct.

In addition, the battleship *Ostfriesland* is known to have received extensive underwater damage, but this is believed to have been due to a mine.

Ships Sunk by Torpedoes.

Pommern.—This ship was torpedoed during the night and sank instantly. It is reported to have been struck in the magazine. There were no survivors. Evidence points to this ship having been sunk by the Fourth Flotilla about 11.30 p. m. The enemy attacked by the Fourth Flotilla between 11.10 p. m. and 12.25 a. m. appears to have been consisted of a battle squadron of *Deutschland*-type battleships, preceded by light cruisers, and it is uncertain from many other reports whether the ship fired at was a light cruiser or a battleship. Eleven torpedoes were apparently fired at the cruisers between 11.10 and 11.43 p. m. Four hits are claimed, another doubtful. *Muenchen* and *Stettin* were probably torpedoed in this attack.

Five torpedoes apparently were fired at the battleships between 11.30 p. m. and 12.30 a. m. Three hits and one probable hit are claimed. Faulknor reported three torpedo explosions about 11.30 p. m. *Pommern* was in all probability sunk in this attack.

Wiesbaden.—After being disabled by gunfire, this ship was torpedoed either by Onslow at 6.15 or Falmouth at 6.21. Both fired at a disabled light cruiser with three funnels. Onslow reported a hit under the fore conning tower. The range in each case was about 4,000 yards. Wiesbaden did not sink until the next morning. The sole survivor, who remained on board until she sank, reports only one hit by a torpedo.

Rostock.—This ship was torpedoed by a torpedo boat destroyer at about 6.30 p. m. She was, therefore, the vessel claimed by Shark, who hit a light cruiser with four funnels at 6 p. m. with a torpedo. The cruiser appeared to catch fire. Rostock remained afloat until the following morning, when she was apparently blown up by her own crew, who were taken off by German destroyers.

Frauenlob.—The evidence available points to this ship having been torpedoed by Southampton, who fired one torpedo at a group of searchlights at 10.21 p. m. Frauenlob was hit, and sank rapidly after being torpedoed. There were only about eight survivors, who were picked up by Dutch fishing craft.

Luetzow.—This ship is reported by a deserter to have been hit by a torpedo at 6 p. m. just abaft the foremast. She became totally disabled and was sunk by the enemy next morning. Other statements made by the deserter were so imaginative that this hit can only be as a "possible." The position of the hit given in his statement is, however, corroborated by Falmouth, who claims to have hit the leading battle cruiser, Luetzow, at 6.55 just abaft foremast. On the other hand Yarmouth fired a torpedo at the leaking ship of the German battle cruisers at 6.30 and Admiral Beatty from the Lion reports this ship leaving the line of battle at 6.36. Luetzow may have been sunk by gunfire.

Ships Reported Hit by Torpedoes.

Markgraf.—There is no evidence at all as to when this vessel was torpedoed.

Rheinland, Nassau, Westfalen.—It appears possible that these ships were torpedoed by the Twelfth Flotilla, which attacked a squadron of four dreadnaught battleships about 2 a. m. The enemy appears to have consisted of four two-funnelled ships, class uncertain. Seven torpedoes were fired at a range of about 3,000 yards and eight hits are claimed, on the second, third, and fourth ships of the line. The second ship appeared to blow up, but this has not been confirmed.

Actual hits appear to have been as follows:

Second ship.—At least one hit, perhaps more; two under bridge, one abreast mainmast. Appeared to blow up.

Third ship.—One between funnels.

Fourth ship.—One amidships.

These vessels were probably Rheinland, Nassau, and Westfalen. All returned to harbor.

Von Der Tann.—The reported damage to this ship could have been caused during the torpedo attack on the German battle cruisers at 4.15 p. m., but there is considerable doubt as to whether this ship was actually torpedoed. This hit is, therefore, only counted as "possible."

Muenchen and Stettin.—It appears possible that these ships were struck at the same time as Pommern, as this type of light cruiser would be likely to accompany vessels of the Pommern class. At 11.55 Broke fired a torpedo at a cruiser with three funnels and reported a hit amidships. At 11.30 Garland likewise claimed a hit abreast mainmast on a light cruiser with three funnels. As the range in each case was only 8,000 yards, it is probable that the light cruisers were Muenchen and Stettin.

Ostfriesland.—There is no evidence as to when this ship was damaged, except that it was in the early morning. The damage was almost certainly from a mine, and this has not been counted as a hit.

SUMMARY OF HITS OBTAINED

(1) Caused ship to sink:

	Certain or probable	Possible
<i>Pommern</i>	1	
<i>Frauenlob</i>	1	
One destroyer	1	
(2) Instrumental in sinking:		
<i>Luetzow</i>		1
<i>Wiesbaden</i>	1	
<i>Roslock</i>	1	
(3) Caused damage but did not sink:		
<i>Markgraf</i>	1	
<i>Rheinland</i>	1	
<i>Nassau</i>	1	
<i>Westfalen</i>	1	
<i>Von Der Tann</i>		1
<i>Muenchen</i>	1	
<i>Stettin</i>	1	
Total	11	2

It is also possible that some of the above ships may have been hit by more than one torpedo, especially during the frequent attacks made during the night by the torpedo boat destroyer flotillas.

The Elbing was sunk in collision while avoiding a torpedo.

Four destroyers were also sunk, presumably by gunfire only.

In justice to the ships claiming hits during the various actions, it must be clearly emphasized that the above remarks are only a provisional attempt to allocate the hits, based on the scanty evidence at present available.

General Torpedo Remarks.

In most cases in the Battle of Jutland torpedoes were fired under conditions now generally recognized as the best, viz:

	Range.	Inclination of enemy.
	Yards.	Degrees.
Day	7,000-10,000	100 to 135
Night	800- 3,000	90 to 130

During the battle cruiser action prior to 4.40 p. m., the enemy's first scouting group were slightly abaft the beam of the British battle cruisers and well outside torpedo range. An opportunity occurred for day attack with destroyers and was effectively carried out by the Thirteenth Flotilla between 4 and 4.30 p. m. Two destroyers were put out of action after closing to 5,000 yards or less. This proved to be rather too close. After 4.40 p. m. the battle cruisers were still outside torpedo range. No opportunity occurred throughout the action for firing 18-inch torpedoes from battle cruisers.

The opening stages of the battle fleet action about 6.30 p. m. were distinctly favorable for E. R. torpedo attack as regards position and range, but the low visibility prevented a clear appreciation of the general torpedo situation being formed; the first cruiser squadron was also between the battle fleet and the enemy, while the battle cruisers were barely clear of the second battle squadron at the van. When the British ships had cleared the range, the enemy were distinctly seen and commenced to retire under the pressure of the gunfire, and no subsequent opportunity for daylight torpedo attack occurred.

The destroyer day attacks carried out by both British and German squadrons showed that, against an enemy who is developing a rapid and effective gunfire, destroyers should not approach within 7,000 yards gun range of the enemy heavy ships. If, however, enemy gunfire has been crushed or reduced in volume, the attack should be pressed home until a position of 5,000 yards from the enemy line is attained in order to insure torpedoes crossing the track should the enemy turn away. Except when firing torpedoes at single disabled ships little advantage is gained in closing to within 5,000 yards.

A noticeable feature of the torpedo records of the action is the considerable difference in the numbers of torpedoes fired by ships in the same squadron and for whom the torpedo situation at a particular moment was presumably very similar. In one squadron seven torpedoes were fired by one ship, one by another, and none by a third. It is of very great importance, when the conditions admit, that torpedo fire should be opened by a maximum number of ships possible at the earliest moment, always allowing a reasonable margin for range and for torpedo and sighting errors. Further, a steady rate of fire should be kept up. Success in a "browning" attack must depend upon the number of torpedoes which can be thrown across the enemy's line.

The action emphasized the importance which attaches to efficient lookouts being stationed to give warning of the approach of torpedoes, enabling immediate steps either by a turn toward or away to be taken to avoid them. The selected lookouts must be highly trained and able to pick up the tracks of torpedoes under unfavorable conditions.

The torpedo actions during the battle emphasized the importance of a torpedo-control officer being stationed in light cruisers and destroyers to assist the captain during the attack. In destroyers it may be necessary that such officer should be also a gun-control officer. He should be available for controlling either the gun or torpedo armament, according to whether the gun or torpedo situation is at the particular moment considered of paramount importance.

TORPEDOES FIRED AT THE ENEMY DURING THE BATTLE OF JUTLAND BANK. 31 MAY 1916. DAY ACTION

L.—Torpedo Attacks on German Battle Cruisers, 4.15 to 5.15 p. m.

This attack was commenced at 4.15 p. m. by 12 torpedo-boat destroyers against five battle cruisers, then steering southeast. The attack was broken up by an action with a German flotilla of 1 light cruiser and 15 torpedo-boat destroyers. Although the

Germans were driven back, only 5 torpedoes out of the 48 carried by the attacking torpedo-boat destroyers could be fired across the line of the battle cruisers before they turned at 4.52 p. m. to northwest.

Five more torpedoes were fired after the turn to northwest, two by Nerissa, one of the attacking flotilla, and three from the British battle cruiser line, two from Lion, one from Moresby, stationed on her engaged bow.

Morseby and Nerissa both claimed hits on the rear ship of the line, at approximately the same time. As Fearless reported a battle cruiser leaving the line at 5.10 p. m., it appears probable that one hit at least was obtained. This may have been the Von Der Tann, but there is considerable doubt as to whether this ship was actually torpedoed. Three torpedoes are known to have passed close to Moltke.

Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
13	2	2 to 5	Possibly 1

II.—Attacks on German Battle Fleet, 4.40 to 5.30 p. m.

On the German Battle Fleet being sighted in the rear of their battle cruisers, they were attacked by Nottingham with an E. R. torpedo, at very short range by Nestor and Nicator, who had just been attacking the battle cruisers, and subsequently by Moorsom at a longer range.

Torpedoes Fired	Hits Claimed	"Probability"	Actual Hits
7 to 8	2 to 3	No evidence

It is possible that the Markgraf was hit during this attack instead of as indicated in V.

III.—Attacks on German Battle Cruisers During the Fleet Action, 6 to 7 p. m.

Five torpedoes were fired at the battle cruisers by various torpedo-boat destroyers and light cruisers during the deployment of the Grand Fleet and the turn of the Germans to the south.

Hits are claimed by Acasta and Falmouth on the leading battle cruiser, and by Ophelia on a battle cruiser whose position in the line is not stated. One battle cruiser is reported to have left the line at about 6.30 p. m. This was the Luetzow, and it is counted as a "possible" hit.

Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
5	3	1 to 2	Possibly 1

IV.—Torpedoes Fired at the German Battle Fleet Between 6 and 7.30 p. m.

Vailant and Malaya fired one torpedo each at the head of the line, Onslow and Marlborough at the Kaiser group; Lion and Revenge, point of aim not stated. Lion and Marlborough fired E. R. torpedoes.

No hits were seen.

Torpedoes Fired	Hits Claimed	"Probability"	Actual Hits
8	1 to 3	No evidence

It is possible that Markgraf was hit in this attack and not as indicated in V.

V.—Torpedoes Fired at the German Battle Fleet Just Before Dark.

Five torpedoes were fired at a group of ships apparently consisting of three Deutschland type, some Kaiser type, and three Nassau type. No hits were claimed by the firing ships, but an explosion was seen to take place on a large ship apparently of the Kaiser class at 8.40 p. m. If the times are correct, this explosion may have been caused by Calliope's torpedo. This ship may have been the Markgraf, but it is not known at what time she was torpedoed. (See above).

Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
5	1 to 2	Possibly 1*

VI.—Attacks on Detached or Disabled Ships During the Day Action.

In the destroyer action at 4.15 p. m. Petard fired a torpedo at a group of three or four German torpedo-boat destroyers and claims to have sunk the leader.

Lion, Onslow, and Falmouth fired among them four torpedoes at a disabled light cruiser with three funnels, probably the same one in each case. This was the Wiesbaden. Lion and Onslow claimed hits.

Marlborough and Shark fired two torpedoes at a four-funnelled cruiser—the Rostock. Shark obtained a hit.

Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
7	4	2	Probably 3

SUMMARY OF TORPEDOES FIRED DURING DAY ACTION

Torpedoes fired.	Hits claimed	"Prob-ability"	Estimated actual hits.	
			Poss-ible	Prob-able or certain
I. 13 (1 misfire) -----	2	2 to 5-----	1	
II. 7 or 8 -----		2 to 3-----	No evd.	No evd.
III. 5 -----	3	1 to 2-----	1	
IV. 8 -----		1 to 3-----	No evd.	No evd.
V. 5 -----		1 to 2-----		1
VI. 7 -----	4	2-----		3
Total:				
Without VI, 38 or 39-----	5	7 to 15-----	2	1
With VI, 45 or 46-----	9	9 to 17-----	2	4

Number fired by different types of ships (VI excluded):	
Battle cruisers -----	5
Light cruisers -----	7
Battleships -----	4
Torpedo-boat destroyers -----	22

NIGHT ATTACKS.

I—Attack on German Cruisers by Castor, Magic, and Marne, 9.50 to 10.50 p. m.

Several cruisers were seen. Four torpedoes were fired; other torpedo-boat destroyers did not fire apparently because they were

*This hit is counted as a "probable"; it may not have been on this occasion that *Markgraf* was hit.

blinded by the glare of Castor's guns or because they thought the enemy might be British ships.

Marne and Magic claimed hits, apparently on different ships.			
Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
4	2	2	Possibly 1.

Ship not identifiable.

II. — Light Cruiser Attack, 10.21 p. m.

One torpedo fired by Southampton at a group of searchlights. Hits claimed on leading ship. "Probability" about 50 per cent. Frauenlob was hit, and sank rapidly.

III. — Attack by Fourth Flotilla on German Cruisers and Battleships, 11.10 to 12.25.

The enemy appears to have consisted of a battle squadron of the Deutschland type preceded by light cruisers, and it is uncertain from many of the reports whether the ship fired at was a light cruiser or a battleship.

Eleven torpedoes were apparently fired at the cruisers between 11.10 and 11.43 p. m. Four hits are claimed; another doubtful.

Muenchen and Stettin were probably torpedoed in this attack.

Five torpedoes apparently were fired at the battleships between 11.30 p. m. and 12.30 a. m. Three hits and one probable hit were claimed.

Faulkner reported three torpedoes explosion at about 11.30 p. m.

Torpedoes Fired	Hits Claimed	"Probability"	Estimated Actual Hits
16	*6	10 to 11	Probably 3.

* Two doubtful.

Pommern was probably sunk in this attack.

IV. — Attacks by Twelfth Flotilla on a Squadron of Four Dreadnaught Battleships or Battle Cruisers, 2 to 2.30 a. m.

The enemy appears to have consisted of four two-funnelled ships; class uncertain.

Seventeen torpedoes were fired, and eight hits were claimed, on the second, third, and fourth ships of the line. The second ship appeared to blow up, but this has not been confirmed.

Actual hits appear to be as follows:

Second ship. — At least one hit, perhaps more; two under bridge, one abreast mainmast. Appeared to blow up.

Third ship. — One between funnels.

Fourth ship. — One amidships.

These ships were probably Rheinland, Nassau, and Westfalen. All returned to harbor.

Torpedoes fired	Hits claimed	"Probability"	Estimated actual hits
17	8	7	Probably 3.

V. — Attack by Moresby on a Squadron of Four Deutschland Class, 2.37 a. m.

One torpedo was fired; Moresby claimed a hit on the third ship of the line.

Torpedoes fired	Hits claimed	"Probability"	Estimated actual hits
1	1	50 per cent	Possibly 1.

Ship not identifiable.

SUMMARY OF TORPEDOES FIRED IN NIGHT ATTACKS

	Torpedoes Fired	Hits Claimed	"Prob-ability"	Estimated Actual hits	Per cent
I.....	4	2	2	Possibly 1*	-----
II.....	1	1	50 percent	-----	-----
III.....	16	7 to 9	10 to 11	Probably 3..	-----
IV.....	17	8	7	do.....	-----
V.....	1	1	50 percent	Possibly 1*	-----
Total.....	39	19 to 21	20 to 21	7.....	18

* These must be classed "improbable." Ships hit not identified.

TORPEDOES FIRED BY THE ENEMY—BATTLE OF JUTLAND BANK AND THE DAY FOLLOWING.

An analysis and summary of all torpedoes reported to have been fired by the enemy at British ships and vessels during the Battle of Jutland Bank and on the day following follow:

The various attacks have been classified as follows:

I. Attack on battle cruisers by German submarines, 3.45 to 4.15 p. m.

II. Attack on Third Battle Cruiser Squadron by German light cruisers, 5.45 to 6.15 p. m.

III. Concentrated attack on First Battle Squadron, 6.45 to 7.15 p. m., apparently by two submarines.

IV. Concentrated attack on First Battle Squadron, 7.33 to 7.38 p. m., apparently by one destroyer flotilla.

V. Torpedoes fired at cruisers at head of line about 6.40 p. m.

VI. Torpedoes fired at cruisers at head of line about 7.30 p. m.

VII. Single torpedoes fired at fleet.

VIII. Individual attacks on Champion and torpedo-boat destroyers by German torpedo-boat destroyers.

The probability figures are based on the results of torpedo long-range firing in peace time, when alterations of course were not allowed.

SUMMARY OF RESULTS

Torpedoes seen	Hits	Under	Short	Avoided	Missed	Hits (per cent)
66+(?)	2	4	2 or 3	32+(?)	25+(?)	About 2.5

The two attacks on the First Battle Squadron must be regarded as successful operations in a sense, although unfruitful.

On each occasion a large number of torpedoes were successfully fired across the track of the battle squadron. Had it not been for the good lookout kept and the successful use of helm, six or seven hits should have been obtained.

Some of the torpedoes appear to have been running badly and several appeared to be at the extreme end of their run. One at least must have passed under; four others are reported to have passed under on less definite evidence.

Of the eight torpedoes fired during the night, three ran on the surface. This was probably intentional.

SUMMARY OF GERMAN TORPEDOES WHICH MISSED THEIR AIM

Ship.	Missed.	Missed Under.	Hit.
Battle-cruiser force:			
<i>Nicator</i>	1		
<i>Tiger</i>	4		
<i>Princess Royal</i>		2	
<i>Invincible</i>	(?) 5		
<i>Indomitable</i>	5		
<i>Inflexible</i>	4	1	
Battle fleet:			
<i>Iron Duke</i>	2		
<i>Marlborough</i>	5	1	1
<i>Revenge</i>	3		
<i>Hercules</i>	3		
<i>Agincourt</i>	4		
<i>Collingwood</i>	2		
<i>Neptune</i>	1		
<i>St. Vincent</i>	3		
<i>Barham</i>	4		
<i>Malaya</i>	(?) 1		
<i>Duke of Edinburgh</i>	6		
<i>Calliope</i>	1	1	
<i>Champion</i>	1		
<i>Shark</i>	1		1
<i>Unity</i>	1		
<i>Garland</i>	3		
	<hr/>	<hr/>	<hr/>
	59	5	2
	<hr/>	<hr/>	<hr/>
	Total	66	

I—Attack on Battle Cruisers by German Submarine, 3.45 to 4.15 p. m.

The battle cruisers were steering southeastwardly, with *Lydiard* and *Landrail* on the engaged (port) bow of *Lion*, and *Thirteenth Flotilla* ahead.

3.30 p. m.—Torpedo fired by a submarine at *Nicator*; surface run; *Nicator* turned away at full speed; torpedo missed ahead.

3.45 p. m.—Torpedo fired by a submarine passed under *Landrail* and crossed the line of battle cruisers; *Landrail* reported between *Tiger* and *New Zealand*, *Lydiard* 60 yards ahead of *Queen Mary*.

4.11 p. m.—Torpedo passed under *Princess Royal* amidships.

Torpedo seen	Avoided	Missed	Passed under	"Probability"
3	1	1	1	1

II.—Attack on Third Battle Cruiser Squadron by German Light Cruisers, 5.45 to 6.15 p. m.

5.45 p. m.—Invincible sighted several torpedoes fired by a light cruiser, afterwards destroyed; avoided by turning away.

6.13 p. m.—Indomitable sighted five torpedoes, fired apparently by light cruisers; avoided by turning away; one ran alongside for 20 yards but ship outran it; two passed astern.

6.15 p. m.—Inflexible sighted three torpedoes; one passed slowly down port side 20 feet off; one passed astern; one passed under, and was seen on far side.

Torpedoes seen	Avoided	Passed under	"Probability"
8+uncertain	7+uncertain	1	3 to 4

III.—Concentrated Attack on First Battle Squadron, 6.45 to 7.15 p. m.

Eight or nine torpedoes were seen. The first (doubtful report) stopped short on starboard bow of *St. Vincent*, the second struck *Marlborough* on the starboard bow. Another stopped short 100 yards on starboard quarter of *St. Vincent*, who had altered course away on sighting it. The remainder crossed the track (see list below) and were avoided by the use of helm.

No.	Time.	Reported by—	Turned.	Result.
1	6.40	<i>St. Vincent</i>	-----	Stopped 200 yards short.
2	6.54	<i>Marlborough</i>	-----	Hit.
3	7	<i>St. Vincent</i>	Away.....	Stopped 100 yards short.
4	7	<i>Marlborough</i>	Toward.....	Passed under stern.
5	7.1	<i>Marlborough</i>	Away.....	Passed ahead and close under bow.
6	7.1	<i>Marlborough</i>	Away.....	Passed ahead and close under bow.
7	7.9	<i>Revenge</i>	-----	Passed astern.
8	7.8	<i>Agincourt</i>	Not stated.....	Just missed astern.
9	7.15	<i>Neptune</i>	Away, then toward.....	Near port quarter.

These torpedoes may have been fired by:

(a) Disabled cruiser about 10,000 yards on starboard beam (reported by *Marlborough* and *Hercules* as *Roon*, by *Revenge* as a light cruiser, by *Neptune* as a three-funneled ship). It was probably the *Rostock*.

This is thought improbable, as the torpedo would have to possess a speed and range of 30 knots to 12,000 yards at least. It is not impossible, however, that the *Rostock*, being a modern light cruiser, may have had a torpedo of this speed and range.

(b) *Neptune* believed two submarines were sighted about 2 miles off. *Revenge* considered she hit the submarine which torpedoed *Marlborough*.

Agincourt sighted a periscope at 7 p. m., and considered torpedo, which missed astern of her, was fired by a submarine.

Barham reported firing on a submarine about this time.

(c) *Neptune* and *Collingwood* reported torpedo-boat destroyers.

It appears most probable that these eight torpedoes were fired

by two submarines (carrying at least two bow and two stern tubes each). They may have come from the torpedo-boat destroyers, but in view of a torpedo-boat destroyer attack having definitely been made a few minutes later, this is less likely, except in Neptune's case, No. 9, 7.15 p. m.

No special remarks were made on the running of these torpedoes. Except for the two which stopped short of St. Vincent, they all appear to have been running efficiently.

The apparent concentration on *Marlborough* is probably due to the center ship of the squadron having been taken as point of aim.

Torpedoes Seen.	Hit.	Short.	Avoided.	"Probability."
8 or 9	1	1 or 2	6	2

IV.—Concentrated Attack on First Battle Squadron, 7.33 to 7.38 p.m.

Eleven (possibly 12) torpedoes were seen. One appeared to pass under *Marlborough*. The others were avoided by a general turn away, and by the use of helm.

1 and 2. Passed one on either side of *Collingwood*, about 200 yards apart, running neck and neck in a course of about 60° port. *Colossus* and *Collingwood* turned away. *Colossus* reports torpedo running slow and erratic, leaving a broad track. One passed 30 yards ahead of *Collingwood*, the other 10 yards astern.

3 and 4. Sighted on starboard bow of *Marlborough*, who turned to port, and subsequently back to starboard. One passed ahead, the other close under stern.

5. Sighted on starboard beam of *Marlborough*, appeared to pass under ship abreast of "Y" turret.

6. Broke surface 25 to 30 yards on starboard beam of *Revenge* after alteration of course to port.

7. Passed 30 yards astern of *Revenge* at approximately the same time as 6. *Revenge* reported these torpedoes running straight, and keeping good depth, but at end of run.

8 and 9. Sighted 800 yards on starboard quarter of *Hercules*, after the turn to port. Course altered 5 points to port to avoid 8, which passed 40 yards ahead; 9 was seen bearing starboard 100°, distant 700 yards, was lost sight of when course was altered for 8, was last seen bearing starboard 160°, and it is estimated to have passed very close to stern. Ship's going to port was checked to avoid swinging over on to this torpedo, which was, however, not seen again on the port side.

10. Two torpedoes sighted by *Agincourt*. Avoided by use of helm; passed 50 to 100 yards ahead. The latter was probably 9 above.

11. Just missed stern of *Agincourt*; slower running. Avoided by use of helm. *Barham* reported seeing four tracks ahead between 7 and 8 p. m. *Malaya* reported seeing several tracks; not verified.

These torpedoes appear to have been fired by a flotilla of torpedo-boat destroyers. Bearing and distance reported as follows:

Time	Ship reporting	Bearing	Distance	Number
<i>H. m.</i>			<i>Yards</i>	
7 40	<i>Colossus</i>	70° starboard.....	6,000	1
7 30	<i>Collingwood</i> ..	5 abaft starboard beam (795° starboard)	1,000 (710,000)	3 or 4
7 15	<i>Neptune</i>	WNW.....	8,000-10,000	6 to 8
7 35	<i>Revenge</i>	70° starboard.....		1
7 35	<i>Agincourt</i>	Starboard beam.....		

No. 1 appears to have been running badly, and probably cold.

No. 5 appears to have passed under Marlborough.

Nos. 6 and 7 are reported as running well, but at the end of their run.

No. 11 seems to have been running slow.

The range and bearing given by Colossus is consistent with a 28-knot 7,000-yard torpedo, such as the Germans are known to have had in large numbers.

The apparent concentration on Marlborough was probably due to the center ship of the squadron having been taken as a point of aim.

Torpedoes seen	Under	Avoided	"Probability"
11 or 12	1	10 or 11	4

V.—Torpedoes Fired at Cruisers at Head of Line about 6.40 p. m.

(a) Tiger reported, 6.37 to 6.39 p. m.—Three torpedoes passed close to stern. Course altered for one, but the others passed clear.

(b) Princess Royal reported, 6.40 p. m.—Torpedo passed under amidships.

(c) Duke of Edinburgh reported, 6.47 p. m.—Track of torpedo observed passing starboard to port. Helm put hard over to avoid, or it would otherwise have struck. The torpedo passed 50 yards astern.

Torpedoes seen	Avoided	Passed under	Missed	"Probability"
5	2	1	2	2

VI.—Torpedoes Fired at Cruisers at Head of Line about 7.30 p. m. by German Torpedo-Boat Destroyers.

(a) Inflexible reported, 7.25 p. m.—Track of torpedo passed astern at 150 yards (fired by torpedo boat).

(b) Calliope, 7.25 p. m.—Attacked by eight torpedo-boat destroyers, bearing starboard 75°, 7,000 yards on parallel course. Speed of Calliope, 27½ knots; enemy estimated 33 knots. Four torpedoes seen—

	Seen	Passed
(a)	100 yards off.....	0 to 5 yards ahead.
(b)	150 yards off.....	5 to 15 yards astern.
(c)	Well ahead	100 to 150 yard ahead.
(d)	Well ahead	400 to 500 yards ahead.

Torpedoes were running straight and well, leaving tracks like cold torpedoes.

(c) Caroline, 7.35 p. m.—Enemy fired from behind smoke screen, Caroline steering toward enemy. First torpedo passed down port side, second down starboard side; surfaced when abeam at end of run and passed close to stern.

Appeared to be an 18-inch, and was painted red.

Torpedoes seen	Missed	"Probability"
7	7	2

VII.—Single Torpedoes Fired at Fleet.

(a) Iron Duke-Oak reported, 7.35 p. m.—Track passed 200 yards ahead of Iron Duke. The torpedo traveled slowly, and finished its run 2,000 yards on port side of line and then sank.

(b) Iron Duke-Benbow reported, 8.27 p. m.—Observed torpedo crossing Iron Duke's bow.

(c) Barham, 6 to 7 p. m.—Four torpedoes passed through the line close to Barham and were avoided by turning away. A submarine was fired on about this time.

(d) Malaya.—Several tracks reported, but none verified.

(e) St. Vincent.—Track seen between 8 and 8.10 p. m., which passed between Neptune and St. Vincent.

(f) Agincourt reported, 8.25 p. m.—Observed a track on starboard side and used helm. Torpedo came to surface apparently at end of run, 150 yards on starboard bow.

(g) Inflexible reported that at 8.35 p. m. the track of a torpedo crossed her bows.

Torpedoes seen	Avoided	Missed	"Probability"
9+uncertain	5	4+uncertain	3 or 4

VIII.—Individual Attacks on Champion and Torpedo-Boat Destroyers by German Torpedo-Boat Destroyers.

(a) Shark was attacked at about 7 p. m. by two torpedo-boat destroyers with two torpedoes at a range of 1,500 to 1,800 yards; one hit and sank her.

(b) Unity was attacked at 10 p. m. by a German torpedo-boat destroyer with one torpedo. Enemy's range, 1,000 yards, bearing 160°; course two points outward. Torpedo was seen to leave tube. Speed was increased, helm put hard over toward the enemy; torpedo passed 30 feet astern.

(c) Garland was attacked at 9 p. m. by two German torpedo-boat destroyers with two torpedoes.

Enemy's range 600 yards, bearing 79° opposite course. Approach of torpedoes both seen and heard; ran on surface. Both missed astern, by 10 feet and 20 yards.

(d) Garland was attacked again at 2.30 a. m. by one German torpedo-boat destroyer with one torpedo.

Enemy's range 4,000 yards, bearing 67°, opposite course. Torpedo ran on surface and missed astern by 500 yards.

(e) Champion was attacked at 3.30 a. m. by four torpedo-boat destroyers with two torpedoes. Avoided by use of helm, one passing under bows, one missing close astern.

Torpedoes	Hit	Missed ahead	Missed astern	Not stated	"Probability"
Fired	1	1	5	1	2
8					

NOTE.—Three out of the eight ran on the surface.

III

NARRATIVE OF THE BATTLE OF JUTLAND

(Note.—This narrative has been compiled from the account of the battle of Jutland by Arthur Pollen in his book "The Navy in Battle;" from a United States War College article on the battle of Jutland compiled by Lieut. Commander H. H. Frost, U. S. N.; and from various English and German reports. The narrative does not pretend to be complete. Special emphasis has been placed upon the part of the torpedo in the battle. The narrative, so to speak, is merely a frame-work to make intelligible the important and probable relation of torpedo attacks to the main action. This narrative can be most profitably studied in connection with the preceding detailed accounts of torpedo attacks in the battle of Jutland.)

On the early afternoon of 31 May 1916, the English Grand Fleet, according to Admiral Jellicoe's report, was running on its particular sweep through the North Sea. The Grand Fleet was divided into two main detachments—the main body under the commander in chief, Admiral Jellicoe, and the scouting or battle cruiser force under Vice Admiral Beatty. The main body of the Grand Fleet consisted of 25 dreadnaught battleships, 3 battle cruisers, 9 armored cruisers, 10 light cruisers, and about 63 destroyers. About 50 miles to the southward of the main body was the battle cruiser force commanded by Vice Admiral Beatty, which was composed of *Lion* (flagship), *Tiger*, *Queen Mary*, *Princess Royal*, *New Zealand*, and *Indefatigable*. This battle-cruiser fleet was accompanied by the fifth battle squadron, composed of *Barham* (flagship), *Valiant*, *Warspite*, and *Malaya*. In addition, there were the First, Second, and Third Light Cruiser Squadrons and about 84 destroyers.

According to Admiral Beatty's report, the battle cruisers were steering towards the northward to join the commander-in-chief. The light cruisers were formed in a screen to the rear of the capital ships about 15 to 20 miles from the battle-cruiser fleet.

At 2.20 p. m. *Galatea*, in the east sector of the light cruiser screen surrounding the British battle cruiser fleet, reported to Admiral Beatty the presence of enemy vessels—actually the second German light cruiser group to the east.

Admiral Beatty, with the capital ships, at once changed course to south-southeast with the intention of warding off the battle forces from their base. At 2.25 *Galatea* reported the enemy force was considerable. At 2.35 Admiral Beatty observed a great deal of smoke to the eastward. At 2.45 he ordered *Engadine* to send up a seaplane. By 3.08 this order had been executed, but the information obtained was too late to be of great value. At 3.30 the forces of Admirals Beatty and Hipper sighted each other. As soon as Admiral Beatty made out the German battle cruisers he formed line of battle—*Lion*, *Tiger*, *Queen Mary*, *Princess Royal*, *New Zealand* and *Indefatigable*. He then changed course six points to the right, steadying on east-southeast. As soon as Admiral Hipper made out the English forces approaching he went column left about 14 points and steadied on course south-southeast. His light cruisers fell in astern with him. Admiral Beatty had so formed his ships for action in a line of bearing that in the northeasterly wind the smoke of one ship should not interfere with the fire of the next. His course, east-southeast, converged on that of the enemy.

Just as Admiral Beatty had given the order to form in a line of

bearing, a torpedo was fired by a submarine at H. M. S. destroyer *Nicator*. As the torpedo ran on the surface, *Nicator* was able to avoid it by turning away at full speed. The torpedo missed ahead by the time the line was formed; the range was about 23,000 yards. The destroyers *Lydiard* and *Landrail* were on the engaged (port) bow of *Lion* and Thirteenth Flotilla ahead. At 3.45 another torpedo fired by a submarine passed under *Landrail* and crossed the line of battle cruisers. *Landrail* reported between *Tiger* and *New Zealand*; *Lydiard* 60 yards ahead of *Queen Mary*. At 3.48 the range had been closed to 18,500 yards, when both sides opened fire simultaneously. The Fifth Battle squadron was at that time out of range. When the range had closed to about 14,000 yards or less, parallel courses were steered and kept until the end of this phase of the engagement.

The Fifth Battle Squadron consisted of four ships of *Queen Elizabeth* class, under the command of Admiral Evan-Thomas. At about the time Admiral Beatty formed his battle line, they were about 10,000 yards off; not straight astern of the battle cruisers, but bearing about half a right angle to port. The course that would bring the enemy into the line of the battle cruiser fleet then was not parallel to that steered by Admiral Beatty, but a course converging on it. It was this that enabled them, with increased speed, to come into action at 4.08 though only then at the range of 20,000 yards.

At 4.03 the sixth ship in the English column, *Indefatigable* (Capt. Sowerby), was hit by a shell in a vulnerable spot. The destruction of the ship was instantaneous and almost the entire personnel, including the captain, were lost. An almost exactly similar misfortune later befell *Queen Mary*, which was sunk at 4.30. Neither ship had in any sense of the word been overwhelmed by the gunfire of the enemy. Indeed, when *Queen Mary* went down, the enemy's fire, which had been singularly accurate and intense in the first phase of the action, had, as the Vice Admiral says in his dispatch, slackened. The superior skill, due chiefly to the wider experience of the British fire-control organization, had already begun to tell, the enemy's fire control being evidently unable to survive the damages and losses of the action.

At 4.11 p. m., just as the Fifth Battle Squadron came into action, a torpedo passed under *Princess Royal* amidships, presumably fired by one of the German battle cruisers.

At 4.15 p. m. eight units of the Fourteenth Flotilla, together with two of the Tenth and two of the Ninth, moved forward from their position well ahead of the British flagship. It was almost simultaneously countered by an identical movement by the enemy, with a considerable preponderance of forces—15 destroyers supported by a light cruiser, *Regensburg*, against the 12 British destroyers. These two forces met before either had reached a position for effecting its main purpose, viz, the torpedo attack on the capital ships. The Germans were driven back, two of their destroyers sunk, and, what was more important, it was made quite impossible for them to carry through a torpedo attack against the English ships. But just as the enemy boats had been unable to get a favorable position for attacking the British battle cruisers, so, too, the English boats, delayed by this engagement, were unable to get the desired position on the enemy bow for employing their torpedoes to the best advantage. Only 5 torpedoes out of 48 carried by the attacking British torpedo-boat destroyers could be fired against

the line of the German battle cruisers before they turned at 4.52 to northwest. Three destroyers, though unable to attack from ahead, pressed forward for a broadside attack on von Hipper's ships, and naturally came under a fierce fire from the secondary armament of these vessels. One of them, *Nomad*, was badly hit and had to stop between the line. She was ultimately lost. Five other destroyers — *Petard*, *Nerissa*, *Turbulent*, *Termagant*, and *Moresby* — pushed home the attack; five torpedoes were fired at about 4.20 by *Nestor*, *Nomad*, and *Nicator*, at 6,000 yards' range, at the battle cruiser line. The *Petard*, coming into contact with a group of three or four torpedo-boat destroyers at 4.25, fired a torpedo at the group, sinking the leader. Within the next 15 minutes she fired three more torpedoes at the second ship in the German line, at 7,000 yards' range. All three passed very close to *Moltke*, but it is doubtful if they hit.

At 4.38 Commodore Goodenough, in command of the Second Light Cruiser Squadron (*Southampton*, *Birmingham*, *Lowestoft*, *Nottingham*, and *Dublin*), which had gotten to its action station ahead of Admiral's Beatty's line a little before the engagement opened with von Hipper at 3.30, reported the advent of Scheer with the German battle squadron from the south. At 4.42 Admiral Beatty, from *Lion*, made out the German battle fleet. He immediately went column right for 18 points and headed to the northward.

At the same time Admiral Hipper performed exactly the same maneuver, taking station ahead of the German battle fleet. Five more torpedoes were fired on the German battle cruisers at 7,000 yards after the turn to northwest, two by *Nerissa*, one of the attacking flotilla, and three from the British battle cruiser line—two from *Lion* and one from *Moresby*, stationed on her engaged bow. *Moresby* and *Nerissa* both claimed hits on the rear ship of the line at approximately the same time. As *Fearless* reported a battle cruiser leaving the line at 5.10, it appears probable that one hit at least was obtained. This may have been *Von Der Tann*, but there is considerable doubt as to whether this ship was actually torpedoed.

While Admiral Beatty turned, Commodore Goodenough in *Southampton* took position to ascertain the precise number and composition of the German forces. To do so the commodore took his squadron under the fire of the German dreadnaughts. He went on until a range of about 13,000 yards was reached, and, having obtained the information he wanted, returned to form with the cruiser fleet on its northerly course. His squadron was barely hit, for thought the fire was intense, the change of range was too rapid and far too difficult for the German fire control to surmount.

On the German battle fleet being sighted in the rear of the battle cruisers, they were attacked by the British cruiser *Nottingham* with an extreme range at 16,500 yards (4.41 p. m.). Four minutes later (4.45) the British destroyers *Nestor* and *Nicator*, which had fallen behind during the destroyer attack on the battle cruisers at 4.15, pressed home an attack on the leading squadron of the battle fleet. *Nestor* fired two torpedoes at 3,000 yards before she was stopped and sunk by gunfire. *Nicator* escaped to the westward, under heavy fire, after firing one torpedo at 3,000 yards.

Admiral Evan-Thomas, with the Fifth Battle Squadron, kept on and engaged the German battle cruisers, while Admiral Beatty made his 18-point turn.

At 4.52 Admiral Evan-Thomas countermarched upon a signal from Admiral Beatty. At 4.57 the turn was completed and this force fell in behind the battle cruiser fleet under long-range fire from the leading ships of the German battle fleet.

At 4.57 the First and Third Light Cruiser Squadrons took station ahead of the battle cruiser fleet, as did the First Flotilla. The Thirteenth Flotilla took station near the Fifth Battle Squadron. The Second Light Cruiser Squadron took station on the port quarter of the battle cruiser fleet.

At 4.57 Admiral Scheer took command of all the German forces. The group of light cruisers and one destroyer flotilla were in the lead. On the port quarter were the battle cruisers, followed at a considerable interval by the battle fleet. The remaining destroyers and light cruisers were on the unengaged side of the battle cruisers and battle fleet.

From the time when Scheer came into action, at 4.57, till 6, Admiral Beatty kept the range at 14,000 yards. Moorsom, one of the ships of the second light cruiser squadron, attacked the battle fleet at 8,500 yards, firing two torpedoes at 5.10 against the second ship of the German line, and 20 minutes later two more against the third ship.

Nomad, which had remained stopped between the lines as a result of a hit by the battle cruisers at 4.20, was sunk by the gunfire of the battle fleet at 5.15.

At 5.35 Scheer began hauling round to the east, changing his course gradually away from the British line, having probably by this time received information of the approach of the Grand Fleet. Admiral Beatty turned with the enemy, increasing speed so as to maintain his general relation to the head of the German line. Scheer realized that if the High Seas Fleet were to be saved he must make good his escape during the deployment of the Grand Fleet, which was advancing in three columns. The circumstances of the moment were especially favorable for such tactics. The conditions of the atmosphere that made long range gunnery difficult made the establishment of smoke screens to render it more difficult still more easy. The wind had dropped, the air was heavy and vaporous, the ships were running from one bank of light fog to another. It was a day on which smoke would stay where it was made, and cling to the surface of the sea, mingling with and permeating the water-laden atmosphere. These were just the conditions in which, were a torpedo attack delivered, it would have a maximum deterrent effect upon the enemy. Scheer's gradual turn to the east may therefore be interpreted as an attempt to open up the range preliminary to escape under cover of a concentrated torpedo attack. A favorable opportunity for this move did not present itself till 6.45.

By 5.35 the English Grand Fleet had reached the immediate vicinity of the scene of battle and its advance detachments were entering into the engagement. The Grand Fleet consisted of the First, Second, and Fourth Battle Squadrons, under the command of Jellicoe, in Iron Duke. While the main body advanced at high speed, probably 20 knots, towards the English forces under Admiral Beatty, the cruiser force, being able to steam at from 3 to 8 knots faster than the battleships, had been sent ahead to reinforce Admiral Beatty. The Third Battle Cruiser Squadron, under Admiral Hood, in *Invincible* (flagship), with *Indomitable* and *Inflexi-*

ble, led the advance, followed by the First and Second Cruiser Squadrons. The First Cruiser Squadron, commanded by Rear Admiral Arbuthnot, was composed of the armored cruisers *Defence*, *Warrior*, *Black Prince*, and *Duke of Edinburgh*. The Second Cruiser Squadron, commanded by Rear Admiral Heath, was composed of five armored cruisers — *Achilles*, *Cochrane*, *Hampshire*, *Shannon*, and *Minotaur*. The light cruisers *Chester* and *Canterbury* were attached to the Third Battle Cruiser Squadron.

At 5.30 Admiral Hood made out the fire of guns to the southwest. He sent *Chester*, one of the two light cruisers attached to his squadron, to clear up the situation. *Chester* ran into four German light cruisers and fought them single handed for some time. The melee between the *Chester*, English destroyers, and German light cruisers at the head of the German line now developed into a very bitter struggle, each side throwing fresh forces into the engagement.

At about 5.57 the English First and Second Cruiser Squadrons (Rear Admirals Herbert L. Heath and Sir Robert Arbuthnot) entered the fight from northeast, and at 6.00 light cruiser *Canterbury* and the entire Third Battle Squadron reached the scene. In face of this overwhelming force, the German light cruisers retired towards the battle cruisers. At 6.00 *Shark* torpedoed a cruiser with four funnels, probably the *Rostock*, which appeared to catch fire. At 6.05 *Onslow* fired a torpedo at 8,000 yards range at the leading ship of the German battle cruisers. The light cruiser *Wiesbaden* was crippled and lost all speed. She was torpedoed by *Onslow* at 6.15, the torpedo hitting under fore conning tower at 4,500 yards range. *Falmouth* also claimed a hit on a disabled light cruiser at 6.21, but there is no evidence that *Wiesbaden* was hit twice. At 6.18 *Onslow* fired two more torpedoes at 8,000 yards at the fourth German ship of the Kaiser class before she was disabled by gunfire.

Rear Admiral Arbuthnot, with the First Cruiser Squadron, in pursuit of the German light cruisers, stood about west-southwest into a position directly between the two battle fleets. The Germans overwhelmed it by a heavy fire. At 6.17 *Defence*, flagship of Admiral Arbuthnot, sank. *Black Prince*, *Warrior*, badly damaged, made off to the northwest. *Duke of Edinburgh*, the last ship in the column, escaped and joined the second cruiser squadron. Admiral Jellicoe reports that "it is probable that Sir Robert Arbuthnot, during his engagement with the enemy light cruisers and in his desire to complete their destruction, was not aware of the approach of the enemy heavy ships, owing to the mist, until he found himself in close proximity with the main fleet, and before he could withdraw his ships they were caught under a heavy fire and disabled."

At 6.14 Admiral Jellicoe gave the order to deploy from the formation of approach into line of battle. *Hood*, in *Invincible*, with *Inflexible* and *Indomitable*, was ordered by Admiral Beatty at 6.20 to take station ahead of the line. The fifth battle squadron, under Evan-Thomas, took position in the rear of the deploying Grand Fleet. During this maneuver the *Warspite's* steering gear jammed and she headed toward the German battle fleet. Although hit many times, she was able to escape by steering with her engines.

The British ships after the deployment were arranged as follows: *Hood*, in *Invincible*, followed by *Inflexible* and *Indomitable*; *Beatty*, in *Lion*, followed by *Tiger*, *Princess Royal*, and *New Zeal-*

and; the Second Battle Squadron, commanded by Vice Admiral Jerram; the Fourth Battle Squadron, including the flagship *Iron Duke*, commanded by Admiral Jellicoe; the First Battle Squadron, commanded by Vice Admiral Burney (*Colossus*, *Collingwood*, *Neptune*, *St. Vincent*, *Marlborough*, *Revenge*, *Hercules*, *Agincourt*); and lastly, the Fifth Battle Squadron, commanded by Admiral Evan-Thomas, now consisting of three ships — *Barham*, *Valiant*, and *Malaya*.

But before the deployment could be completed the Battle Fleet became engaged. At 6.17 the first squadron opened fire on the leading German battleships. The other two squadrons opened fire on the crippled *Wiesbaden*, and at 6.30 shifted their fire onto the German battle fleet.

By 6.25 the English battle cruisers had closed the range to 8,000 yards and had *Luetzow*, von Hipper's flagship, under heavy fire. Simultaneously with this movement, the third light cruiser squadron, under Rear Admiral Napier, composed of *Falmouth*, *Liverpool*, *Gloucester*, *Yarmouth*, and *Ophelia*, from its position on the starboard bow of the British battle cruisers, pushed on to within 7,000 yards of the German battle cruisers. *Ophelia* and *Yarmouth* both fired torpedoes at 6.30 against the leading ship of the German line. As the *Luetzow* is reported to have left the line about six minutes later, it is quite probable that the torpedo of *Yarmouth*, fired at 7,000 yards range, reached its mark. The *Luetzow*, flagship of Admiral von Hipper, had previously been severely damaged by 15 shells of large caliber. Admiral von Hipper entered a destroyer to shift his flag to another of his ships. At about the same time the *Invincible*, flagship of Admiral Hood, was destroyed by the first and almost the only shell that hit her.

Between 6.20 and 6.40 the heaviest fighting of the day occurred. The English fire was concentrated on the battle and light cruisers at the head of the line and on the four leading battleships. The English battle cruisers bore the brunt of the punishment on the English side.

By 6.40 the visibility conditions had become much worse. At about 6.30 the two leading English battle squadrons opened fire; the German commander-in-chief had probably begun to realize the danger of his position with the English fleet so far forward on his port bow. Scheer by this time had had his fleet on an easterly course for 35 minutes, awaiting the opportunity to turn a right angle or more, so as to retreat under cover of torpedo attacks. At 6.45, therefore, Scheer launched a concentrated torpedo attack on the First Battle Squadron. The Third Destroyer Flotilla attacked the First Battle Squadron, and at the same time covered the German battle fleet with a smoke screen. One German destroyer was lost in the attack. Eight or nine torpedoes were seen; the first stopped short on the starboard bow of *St. Vincent*, the second struck *Marlborough* at 6.54 on the starboard bow. Another stopped short 100 yards on starboard quarter of *St. Vincent*, who had altered course away on sighting it. The remainder crossed the track and were avoided by use of helm. (See "Torpedoes Fired by the Enemy," — III. Concentrated Attack on First Battle Squadron, 6.45 to 7.15 p. m., p. 18.)

This concentrated torpedo attack had the desired effect. The enemy, Jellicoe reports, "constantly turned away and opened the range under the cover of destroyer attack and smoke screens as the

effect of British fire was felt." "Opened the range" meant that the object of the torpedo attacks had been attained. For a quarter of an hour the closing movement of the Grand Fleet was converted to an opening movement. Scheer had prevented the close action that he dreaded. He had gained the time needed to turn his whole force from an easterly to a southwesterly course. By 6.50 Admiral Beatty reports "the battle cruisers were clear of the leading British battle squadron, then bearing north-northwest, 3 miles from Lion, the third ship in the line." "At 7.07," he continued, "we hauled round gradually to southwest by south to regain touch with the enemy (who were lost to sight at about 6.50). At 7.14 again sighted them at a range of about 15,000 yards * * *; we re-engaged at 7.17 and increased speed to 22 knots."

About 7.14 the opposing forces again sighted each other. The British battle fleet again entered into action, but the First Battle Squadron was probably the only one to get in any effective fire, as it was stated by Admiral Jellicoe that the Second Battle Squadron was not engaged until 7.20. The Fourth Battle Squadron seems to have been too far behind, and the Fifth Battle Squadron probably took little part in the action between the two battle fleets, having been under severe fire at the time of the deployment of the Grand Fleet.

Again, to disengage the German battle fleet, Admiral Scheer ordered another destroyer attack. At 7.25 two flotillas, backed up by the light cruisers, advanced against the English Fleet. Admiral Jellicoe ordered the Fourth Light Cruiser Squadron to counter the attack. This squadron quickly moved out between the lines and drove the German destroyers back with the loss of one boat. During this torpedo attack, *Inflexible* at 7.25 reported "Saw the track of a torpedo pass astern at 150 yards." *Calliope* at the same time was attacked by eight torpedo boats bearing starboard 75° 7,000 yards on parallel course. Speed of *Calliope*, 27½ knots; enemy estimated 33 knots. Four torpedoes seen.

Seen.	Passed.
(a) 100 yards off.....	0 to 5 yards ahead.
(b) 150 yards off.....	5 to 15 yards astern.
(c) Well ahead.....	100 to 150 yards ahead.
(d) Well ahead.....	400 to 500 yards ahead.

The torpedoes were running straight and were leaving tracks like cold torpedoes. Ten minutes later a torpedo passed down port side of *Caroline*; a second down starboard side surfaced when abeam at end of run and passed close to stern; enemy fired from behind smoke screen.

At 7.33 Scheer launched a third concentrated torpedo attack against the First Battle Squadron, which again caused them to open the range by turning away in order to avoid torpedoes. This gave Scheer, under cover of a smoke screen, his second opportunity to lose touch with the Grand Fleet.

In this attack, from 7.33 to 7.48, 11 (probably 12) torpedoes were seen. One appeared to pass under *Marlborough*. The others were avoided by a general turn away and by use of helm. (See "Torpedoes Fired by the Enemy."—IV. Concentrated attack on First Battle Squadron, 7.33 to 7.38 p. m., p. 55.)

Admiral Beatty described this part of the action:

At 7.32 my course was southwest, speed 18 knots, the leading enemy battleship bearing northwest by west. The destroyers at the head of the enemy line

emitted volumes of gray smoke, covering their capital ships as with a pall, under cover of which they turned away, and at 7.45 we lost sight of them.

Admiral Jellicoe, in the attempt to close the enemy, changed course to west, but he could see them only for short periods and his fire was apparently ineffective. At 7.58 Admiral Beatty sent in the First and Third Light Cruiser Squadrons to pick up the German Fleet. At the same time Admiral Jellicoe sent in the Fourth Light Cruiser Squadron and the Eleventh Flotilla for the same purpose. At 8.20 the English battle cruisers advanced to the north in support of the light cruisers, which had apparently met the German Fleet, and an action of some 10 minutes developed between the English battle cruiser fleet, the First, Third, and Fourth Light Cruiser Squadrons, and the Eleventh Flotilla on the one hand, and the German battle cruisers, light cruisers, and two battle squadrons on the other.

* * *

During this short encounter Calliope at 8.28 fired a torpedo at a 7,000-yard range against the leading ship of Kaiser class, and at 8.30 Princess Royal fired a torpedo at a 10,000-yard range against the center ship of three ships of Deutschland class. No hits were claimed by the firing ships, but an explosion was seen to take place on a large ship, apparently of the Kaiser class, at 8.40. If the times are correct, this explosion may have been caused by Calliope's torpedo. The ship may have been the Markgraf, but it is not known at what time she was torpedoed.

During this engagement Inflexible at 8.35 saw the track of a torpedo which crossed her bow. After 10 minutes' engagement the English forces withdrew from the unequal conflict. The Grand Fleet seems to have lost sight of the Germans until after 8.20, and Admiral Beatty's scouts saw the last of the enemy at 8.38. The Vice Admiral continued search for 40 minutes longer and then fell back east into the line which was the course of the Grand Fleet when he was last in touch with it by wireless. Both fleets seem to have proceeded some distance south and to have waited for the night in the proximity of a point about equidistant (80 miles) from the Horn Reef and Heligoland.

One destroyer flotilla, the Thirteenth, and one light cruiser squadron were retained with the Grand Fleet for protection of the capital ships. The rest were disposed, as the commander-in-chief said, "in a position in which they could afford protection to the fleet and at the same time be favorably situated for attacking the enemy's heavy ships." They must have been placed north of the British force.

No British battle or battle cruiser squadron was attacked during the night.

There were numerous torpedo attacks on the German capital ships during the night. At 9.05 the First Light Cruiser Squadron, commanded by Commodore Sinclair, made contact with the German battle fleet. Caroline fired two torpedoes at 7,600 yards range at the center ship of three ships of the Deutschland class, while Royalist fired one torpedo at the center ship of three ships of the Nassau class. Between 9.50 and 10.50 p. m. Castor, Magic, and Marne made an attack on several German cruisers. Four torpedoes were fired at a range between 1,500 and 3,000 yards. Other torpedo-boat destroyers did not fire, apparently because they were blinded by the glare of Castor's guns or because they thought the

enemy might be their own ships. Marne and Magic claimed hits, apparently on different ships. Ships not identifiable.

The Second Light Cruiser Squadron got into action at 10.20 with five enemy cruisers. One torpedo was fired by Southampton at a group of searchlights, at 1,500 yards range, hitting the leading ship, Frauenlob, which sank rapidly.

From 11.10 to 12.25 the Fourth Flotilla made persistent attacks on German cruisers and battleships. The enemy appears to have consisted of a battle squadron preceded by light cruisers, and it is uncertain from many of the reports whether the one fired at was a light cruiser or a battleship. Eleven torpedoes were fired at the cruisers between 11.10 and 11.43 p. m. Four hits are claimed, another doubtful. Muenchen and Stettin were probably torpedoed in this attack. The range was under a thousand yards. Five torpedoes apparently were fired at the battleships between 11.30 p. m. and 12.30 a. m. Three hits and one probable hit are claimed.

During this encounter Tipperary and Fortune were sunk by gunfire at 11.10, Sparrowhawk was disabled by gunfire at 11.30, and Ardent was sunk by gunfire at 12.25.

From 2 to 2.30 a. m. the Twelfth Flotilla made an attack on a squadron of four dreadnaught battleships or battle cruisers. The enemy appears to have consisted of four two-funneled ships, class uncertain. Seventeen torpedoes were fired at an average range of 3,000 yards, and eight hits are claimed on the second, third, and fourth ships of the line. The second ship appeared to blow up, but this has not been confirmed. Actual hits appear to be as follows:

Second ship.—At least one hit, perhaps more; two under bridge, one abreast mainmast. Appeared to blow up.

Third ship.—One between funnels.

Fourth ship.—One amidships.

These ships were probably Rheinland, Nassau, and Westfalen. All returned to harbor.

During this engagement the upper deck of Onslaught was cleared by gunfire at 2.08, after she had fired four torpedoes.

At 2.37 Moresby sighted four predreadnaughts, possibly a squadron of the Deutschland type. One torpedo was fired at 3,700 yards. Moresby claimed a hit on the third ship of the line, but the ship is not identifiable. Champion was attacked at 3.30 a. m. by four torpedo-boat destroyers with two torpedoes, which were avoided by use of helm; one passed under bow, one close astern. Eight torpedoes in all were fired, three of which ran on the surface. Champion's encounter with four destroyers at 3.30 a. m. was the only engagement after daybreak until a Zeppelin was encountered at 4 a. m.

The battle of Jutland was over; the German Fleet had made good its escape.

The only other occurrences were the attacks on the morning of 1 June against single ships of the Grand Fleet by submarines. Marlborough at 9.30 a. m. sighted two submarines 8 miles away, steering for the ship. At 10.52 a. m. she observed oil patches 2 miles astern; one torpedo passed along broadside 2 cables off; speed of ship, 14 knots. At 9.35 a. m. Warspite saw two torpedoes pass close to ship, one on each side. No track of submarine was

seen; speed of ship, 19 knots. At 11.42 a. m. Warspite saw a periscope close to bow, tried to ram, but missed by a few yards. At 2.15 a. m. St. Vincent saw the track of a torpedo, which was continually breaking surface and stopped about 300 yards short.

REPLY TO PERSIUS BY CAPT. SHEIBE.

Source: Berliner Tageblatt, 4 December 1918.—(Enemy Press Supplement, Daily Review of Foreign Press.)

19 December 1918.

As a long-standing contributor to *Nauticus* and *Marine-Rundschau*, and as first officer of a modern armored cruiser, in which capacity during the war I superintended the gunnery for two years and took part in the Skagerrak battle, I may be permitted to give an expert reply, so far as the materiel of our High Seas Fleet comes in question, to Capt. Persius's article in the *Berliner Tageblatt*, which, under the title "How it happened," vigorously attacked the naval direction and the system of our fleet construction. A ship's type is in its complexity one of the most difficult of technical compromises. The German constructors in adjusting weight pursued a middle course in relation to armament, armor, resistance, speed and bulk. England subordinated protection, security, and resistance to offensive attributes, gun armament, and speed. The touchstone of a weapon is battle. Granted that the calibre of our guns was almost below what was requisite, that with the 10.5 centimeter gun on the small cruiser it did not fully comply with military requirements, still, after our successes in battle, it can by no means be maintained that our materiel was universally "inferior" to the English and "wanting." The material success in battle proves the exact contrary.

In the Skagerrak battle the proportion in strength of the fleets was as 1:2, the proportion of loss in battleships 1:4, in smaller vessels 1:2. Consequently the material success was wholly on the German side. Admiral Lord Fisher was reproached, when the first dreadnaught construction was announced, with these ships being 10-minute ships; that is, they would be overcome in 10 minutes, for they did not possess the necessary resisting power. That more or less occurred. The battle cruisers *Indefatigable* and *Invincible* were blown to bits some 15 minutes after fire was opened and the battle cruiser *Queen Mary* after about half an hour. Our armament was in effect and accuracy superior to the British. The gun caliber was sufficient. On the German side one large battle cruiser, the *Luetzow*, was put out of action, but it sank only during the return. Ships with about 25 severe hits, and very dangerous damage below the water line, got back to the home ports. The *Sevdnitz* continued the fight to the end with undiminished speed, although struck by a torpedo in the fore part at the very beginning of the action.

These are only some few examples in striking confirmation of the quality of our materiel. The artillery successes were achieved not, as Capt. Persius says, in thick weather, but mainly during the first part of the battle, when very clear weather prevailed. It is therefore untenable for Capt. Persius to state that in clear weather the outcome of the battle must have been "annihilating" for us, as "the British guns with their far greater range would have shot to pieces our weakly armed ships." The battle of the Falkland Islands can not be adduced as proof that the German ma-

teriel was inferior, because in that case ships of the dreadnaught type on the English side were pitted against older ships of the predreadnaught type on the German side. The absolute inferiority of the predreadnaught type in comparison with the modern battleship is an obvious fact, which was apparent in the Skagerrak battle also, when the older English armored cruisers were destroyed. But the naval battle of Coronel is a proof that the older German materiel was also superior to the older English.

That the tactical leadership of the English Fleet was "unskillful" no expert will be willing to grant offhand. If Capt. Persius emphasizes the skillful leadership of the German Fleet, he mentions only one cause of our fleet's brilliant success in the matter of armament. As soon as firing by ship against ship begins, materiel and gunnery are decisive. Both proved superior on the German side. If the English Fleet was so sure of its victory, why did Admiral Jellicoe break off the Skagerrak battle, and not fight it out, which he was quite in a position to do? Why did he not energetically pursue the German Fleet on 19 August 1916 and force it to battle when it was announced near the English coast, where the English Fleet was fully assembled?

Capt. Persius further thinks that "for a year it had been possible to speak of a German High Seas Fleet only in a restricted sense," and maintains this by asserting that a great many ships of the predreadnaught type had been withdrawn from the first battle line, because they had to be used for providing material for submarine construction. In reality the withdrawal from the first line was effected because the predreadnaught type is universally so inferior that every artillery battle must be regarded as hopeless for the predreadnaught type. For this reason the English did not put their squadrons of older ships in their battle fleet and for the same reason Admiral Scheer, after the experience of the Skagerrak battle, decided to withdraw them from the first line of battle. That from the material of some of older ships nickel had been obtained for submarine construction has nothing to do with this withdrawal.

IV THE BATTLE OF THE SKAGERRAK

The bombardment of April 25 had not failed to make an impression in England. The expectation that the fleet was bound to succeed in warding off all German attacks on British shores had repeatedly been disappointed. On each occasion the English main fleet had arrived too late—in December, 1914; in January, 1915; and now again this year—so that, to the great annoyance of the English, the German "raiders" got away each time unpunished. Wherefore Mr. Balfour, the First Lord of the Admiralty, felt called upon to announce publicly that should the German ships again venture to show themselves off the British coast, measures had been taken to ensure their being severely punished. However, we were ready to take our chance.

The question was whether it would be advisable to include Squadron II in an advance which in all probability would involve us in a serious battle. Early in May I ordered the squadron temporarily into the Jade Basin that I might have an opportunity of discussing with the Squadron Commander the action to be observed in battle under the most varied conditions. Military reasons entered into the question as to whether the squadron should be taken out or left behind, as well as consideration for the honour and feeling of the crews, who would not hear of being reduced, themselves and their ships, to the second class. For battleships to have their activity limited absolutely to guarding the German Bight without any prospect of getting into touch with the enemy—to which they had been looking forward for a year and a half—would have caused bitter disappointment; on the other hand, however, was the responsibility of sending the ships into an unequal fight where the enemy would make use of his very best material. I cannot deny that in addition to the eloquent intercession of Rear-Admiral Mauve, the Squadron Commander, my own former connection with Squadron II also induced me not to disappoint it by leaving it behind. And thus it happened that the squadron played its part on May 31, and in so helpful a manner that I never had cause to regret my decision.

The repairs on the Seydlitz, damaged on April 24, were not completed until the end of May, as the reconstruction of the mine-shattered torpedo tubes necessitated very heavy work. I had no intention, however, of doing without that battle-cruiser, although Vice-Admiral Hipper, Chief of the Reconnaissance Forces, had meanwhile hoisted his flag in the newly repaired battle-cruiser Luetzow (Captain Harder, formerly on the Stralsund.) The vessels belonging to Squadron III were also having their condensers repaired, as on their last trip there had been seven cases of damaged machinery in that squadron. The advantage of having three engines, as had each of these ships, was proved by the fact that two engines alone were able to keep up steam almost at full speed; at the same time, very faulty construction in the position of the engines was apparent, which unfortunately could not be rectified owing to limited space. Thus it happened that when a condenser went wrong it was impossi-

ble to conduct the steam from the engine with which it was connected to one of the other two condensers, and thus keep the engine itself working. It was an uncomfortable feeling to know that this weakness existed in the strongest unit at the disposal of the Fleet, and how easily a bad accident might result in leakages in two different condensers and thus incapacitate one vessel in the group!

The object of the next undertaking was a bombardment of the fortifications and works of the harbour at Sunderland which, situated about the middle of the East coast of England, would be certain to call out a display of English fighting forces as promised by Mr. Balfour. The order issued on May 18 in this connection was as follows:

"The bombardment of Sunderland by our cruisers is intended to compel the enemy to send out forces against us. For the attack on the advancing enemy the High Sea Fleet forces to be south of the Dogger Bank, and the U-boats to be stationed for attack off the East coast of England. The enemy's ports of sortie will be closed by mines. The Naval Corps will support the undertaking with their U-boats. If time and circumstances permit, trade-war will be carried on during proceedings.

The squadrons of men-of-war had made over the command of prizes to the torpedo-boat flotillas, as torpedo-boats are the best adapted for the examination of vessels, but have not a crew large enough to enable them to bring the captured vessels into our ports. The First and Second Scouting Divisions were placed at the disposal of the Chief of Reconnaissance, and the Second Leader of the torpedo-boats with Flotillas II, VI, and IX. Scouting Division IV* and the remainder of the flotillas were with the Main Fleet. Sixteen of our U-boats were told off for the positions of attack, with six to eight of the Flanders boats. On May 15 they started to reconnoitre in the North Sea, and from May 23 to June 1 inclusive were to remain at the posts assigned to them, observe the movements of the English forces, and gain any information that might be of use to the Fleet in their advance; at the same time they were also to seize every opportunity to attack. Provision was also made for the largest possible number of our airships to assist the enterprise by reconnaissance from the air. The fact that the U-boats could only remain out for a certain period put a limit to the execution of the plan. If reconnaissance from the air proved impossible, it was arranged to make use of the U-boats, and so dispense with aerial reconnaissance.

As the weather each day continued to be unfavourable and the airship commander could only report that it was impossible to send up any airships, the plan was so far changed, though without altering other preparations, that it was decided to embark on a campaign against cruisers and merchantmen outside and in the Skagerrak, with the expectation that the news of the appearance of our cruisers in those waters would be made known to the enemy. With this object in view, they had been told to keep in sight of the coast of Norway, so that the enemy might be notified. In further describing the course of this undertaking, which led to

*The Third Scouting Division, which contained the oldest armoured cruisers, *Prinz Adalbert*, *Prinz Heinrich*, and *Roon*, had long since been handed over to the commander of the Baltic forces, as, owing to their lack of speed and inferior armourplating, the vessels were not suitable for use in the North Sea.

the Battle of the Skagerrak, I shall keep strictly to the official report I sent in.

In judging the proceedings it must be borne in mind that at sea a leader adapts his action to the events taking place around him. It may possibly reveal errors which can only be accounted for later by reports from his own ships or valuable information from enemy statements. The art of leadership consists in securing an approximately correct picture from the impression of the moment, and then acting in accordance with it. The writer of history can then form a tactical inference where obvious mistakes were made, or where a better grasp of the situation would have led to a more advantageous decision. In this event a certain reticence should be observed in making definite assertions that a different movement would have been more successful, for armed efficiency plays the chief part in success and cannot be determined with mathematical precision. I have in mind one hit that did so much damage to our battle-cruiser Seydlitz on January 24, 1915, that one almost came to the conclusion that such ships could not stand many shots of such heavy calibre, and yet the following battle proved the contrary. At all events, a good hit can seal the fate of a ship, even one of the strongest. A naval battle may be open to criticism as to why it happened thus, but anyone who asserted that it might have happened otherwise would be in danger of losing his case.

1

THE ADVANCE

On May 30, as the possibility of a long-distance aerial reconnaissance was still considered uncertain, I decided on an advance in the direction of the Skagerrak, as the vicinity of the Jutland coast offered a certain cover against surprise. An extensive aerial reconnaissance was an imperative necessity for an advance on Sunderland in the north-west, as it would lead into waters where we could not allow ourselves to be forced into giving battle. As, however, on the course now to be adopted, the distance from the enemy points of support was considerably greater, aerial reconnaissance was desirable, though not absolutely necessary. As already stated, our U-boats were in position, some of them in fact facing Scapa Flow, one boat off Morav Firth, a large number off the Firth of Forth, several off the Humber and the remainder, north of the Terschelling Bank, in order to be able to operate against enemy forces that might chance to come from a south-westerly direction. The combination of our total forces taking part was as follows:

A list of warships which on May 30 to June 1, 1916, took part in the Battle of the Skagerrak and the operations connected therewith:

Chief of the Fleet: Vice-Admiral Scheer in Friedrich der Grosse.
Chief of Staff: Captain von Trotha (Adolf).
Chief of the Operating Section: Captain von Levetzow.
Admiralty Staff Officer: Captain Quast-Faslem (Hans).
Commander of "Friedrich der Grosse": Captain Fuchs (Theodor).

SQUADRON I

Chief of Squadron: Vice-Admiral Ehrhard Schmidt, Ostfriesland.
Admiralty Staff Officer: Captain Wegener (Wolfgang).

THE BATTLE OF JUTLAND

Admiral: Rear-Admiral Engelhardt, Posen.
Ostfriesland: Captain von Natzmer.
Thueringen: Captain Kuesel (Hans).
Helgoland: Captain von Kameke.
Oldenberg: Captain Hoepfner.
Posen: Captain Lange.
Rheinland: Captain Rohardt.
Nassau: Captain Klappenbach (Hans).
Westfalen: Captain Redlich.

SQUADRON II

Chief of Squadron: Rear-Admiral Mauve, Deutschland.
Admiralty Staff Officer: Captain Kahlert.
Admiral: Rear-Admiral Baron von Dalwigk zu Lichtenfels,
 Hanover.
Deutschland: Captain Meurer (Hugo).
Pommern: Captain Boelken.
Schlesien: Captain Behncke (Fr.).
Schleswig-Holstein: Captain Barrentrapp.
Hannover: Captain Heine (Wilh.)
Hessen: Captain Bartels (Rudolph).

SQUADRON III

Chief of Squadron: Rear-Admiral Behncke, Koenig.
Admiralty Staff Officer: Captain Baron von Gagern.
Admiral: Rear-Admiral Nordmann, Kaiser.
Koenig: Captain Brueninghaus.
Grosser Kurfuerst: Captain Goette (Ernst).
Markgraf: Captain Seiferling.
Kronprinz: Captain Feldt (Conzanz).
Kaiser: Captain Baron von Kayserling.
Prinz Regent Luitpold: Captain Heuser (Karl).
Kaiserin: Captain Sievers.
Kaiserin: Captain Sievers.

GERMANY'S HIGH SEA FLEET

Chief of the Reconnaissance Forces: Vice-Admiral Hipper,
 Luetzow.
Admiralty Staff Officer: Captain Raeder (Erick).

SCOUTING DIVISION I

Seydlitz: Captain von Egidy (Moritz).
Moltke: Captain von Karps.
Derfflinger: Captain Hartog.
Luetzow: Captain Harder.
Von der Tann: Captain Zenker.
Leader of Scouting Division II: Rear-Admiral Boedicker, Frankfurt
Admiralty Staff Officer: Commander Stapenhorst.

SCOUTING DIVISION II

Pillau: Captain Mommsen.
Elbing: Captain Madlung.
Frankfurt: Captain von Trotha (Thilo).

Wiesbaden: Captain Reiss.
 Rostock: Captain Feldmann (Otto).
 Regensburg: Captain Neuberer.
 Leader of Scouting Division IV: Commodore von Reuter, Stettin.
 Admiralty Staff Officer: Captain Weber (Heinrich).

SCOUTING DIVISION IV

Stettin: Captain Rebenburg (Friedrich).
 Muenchen: Captain Boecker (Oskar.)
 Frauenlob: Captain Hoffmann (Georg).
 Stuttgart: Captain Hagedorn.
 Hamburg: Captain von Gaudecker.

TORPEDO-BOAT FLOTILLAS

First Leader of the Torpedo-Boat Forces: Commodore Michelsen,
 Rostock.
 Admiralty Staff Officer: Captain Junkermann.
 Second Leader of the Torpedo-Boat Forces: Commodore Heinrich,
 Regensburg.
 Chief of Flotilla I: Commander Conrad Albrecht, "G39."
 Chief of 1st Half-Flotilla: Commander Conrad Albrecht, "G39."
 Chief of Flotilla II: Captain Schuur, "B98."
 Chief of 3rd Half-Flotilla: Captain Boest, "G101."
 Chief of 4th Half-Flotilla: Captain Dittamar (Adolf), "B109."
 Chief of Flotilla III: Captain Hollmann, "S53."
 Chief of 5th Half-Flotilla: Commander Gautier, "V71."
 Chief of 6th Half-Flotilla: Commander Karlowa, "S54."
 Chief of Flotilla V: Captain Heinecke, "G11."
 Chief of 9th Half Flotillas: Commander Hoefler "V2."
 Chief of 10th Half-Flotilla: Commander Klein (Friedrich), "G8."
 Chief of Flotilla VI: Captain Max Schultz, "G41."
 Chief of 11th Half-Flotilla: Commander Ruemann, "V44."
 Chief of 12th Half-Flotilla: Commander Laks, "V69."
 Chief of Flotilla VII: Captain von Koch, "S24."
 Chief of 13th Half-Flotilla: Commander von Zitzewitz (Gerhard),
 "S15."
 Chief of 14th Half-Flotilla: Captain Cordes (Hermann), "S19."
 Chief of Flotilla IX: Captain Goehle, "V28."
 Chief of 17th Half-Flotilla: Commander Ehrhardt, "V27."
 Chief of 18th Half-Flotilla: Captain Tillessen (Werner), "V30."

SUBMARINES

Leader of the Submarines: Captain Bauer, Hamburg.
 Admiralty Staff Officer: Captain Luetzow (Friedrich).
 "U24" — Commander: Lieut. Schneider (Rudolf).
 "U32" — Commander: Lieut. Baron Spiegel von und zu Peckel-
 sheim.
 "U63" — Commander: Lieut. Schultze (Otto).
 "U66" — Commander: Lieut. von Bothmer.
 "U70" — Commander: Lieut. Wuensche.
 "U43" — Commander: Lieut. Juerst.
 "U44" — Commander: Lieut. Wagenfuhr.
 "U52" — Commander: Lieut. Walther (Hans).
 "U47" — Commander: Lieut. Metzger.
 "U45" — Commander: Lieut. Hillebrand (Leo).
 "U22" — Commander: Lieut. Hoppe.

- "U19" — Commander: Lieut. Weizbach (Raimund).
 "UB22" — Commander: Lieut. Putzier.
 "UB21" — Commander: Lieut. Hashagen.
 "U53" — Commander: Lieut. Rose.
 "U64" — Commander: Lieut. Morath (Robert).

AIRSHIPS

- "L11" — Commander: Captain Schuetze (Viktor).
 "L17" — Commander: Lieut. Ehrlich (Herbert).
 "L14" — Commander: Lieut. Boecker.
 "L21" — Commander: Lieut. Dietrich (Max).
 "L23" — Commander: Lieut. von Schubert.
 "L16" — Commander: Lieut. Sommerfeldt.
 "L13" — Commander: Lieut. Proelt.
 "L9" — Commander: Captain Stelling.
 "L22" — Commander: Lieut. Dietrich (Martin).
 "L24" — Commander: Lieut. Koch (Robert).

Vice-Admiral Hipper, Chief of the Reconnaissance Forces was ordered to leave the Jade Basin with his forces at 4 a. m., May 31, to advance towards the Skagerrak out of sight of Horns Reef, and the Danish coast, to show himself off the Norwegian coast before dark, to cruise in the Skagerrak during the night, and at noon the next day to join up with the Main Fleet. The ships under his command comprised the Scouting Division I and II. To the latter was attached the light cruiser *Regensburg*, flagship of the Second Leader of the torpedo-boats; under his command were the Flotillas II, VI, and IX. The Main Fleet, consisting of Squadron I, II, and III, of Scouting Division IV, the First Leader of torpedo-boats, in the *Rostock*, and Torpedo-Boat Flotillas I, II, V, and VII, were to follow at 4.30 a. m. to cover the reconnaissance forces during the enterprise and take action on June 1. The sailing order of the battleships was as follows: Squadron III in van, Squadron I following, and Squadron II in the rear.

The *Koenig Albert* was absent from Squadron II, having been incapacitated a few days previously through condenser trouble. Notwithstanding the loss of this important unit, I could not bring myself further to postpone the enterprise, and preferred to do without the ship. Squadron II was without the *Prussen*, which had been placed at the disposal of the Commander-in-Chief of the Baltic forces to act as guard-ship at the south egress from the Sound. *Lothringen* was deemed unfit for service. Scouting Division IV, and the Leader of Torpedo-Boats in the light cruiser *Rostock*, together with the Torpedo-Boat Flotillas I, II, V, and VII, were attached to the battleships.

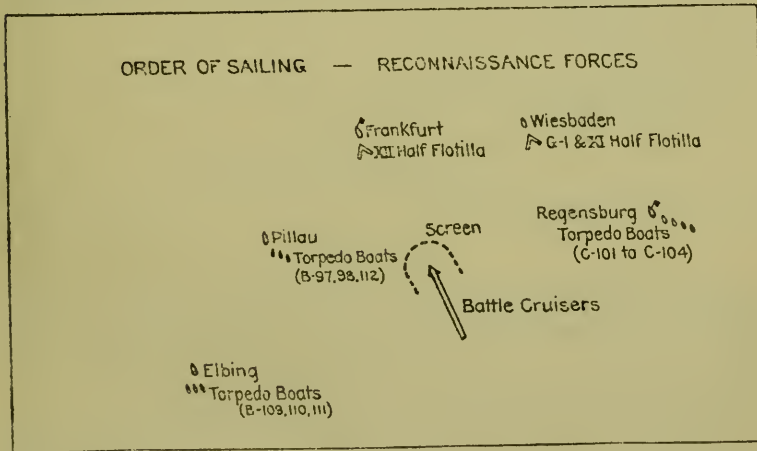
To the west of the Amrum Bank a passage had been cleared through the enemy minefields which led the High Sea Forces safely to the open sea. Visibility was good, with a light north-westerly wind, and there was no sea on. At 7.30 a. m. "U32" reported at about 70 miles east of the Firth of Forth, two battleships, two cruisers, and several torpedo-boats taking a south-easterly course. At 8.30 a second wireless was received stating that she had intercepted EngliCsh wireless messages to the effect that two large battleships and groups of destroyers had run out from Scapa Flow. At 8.48 a. m. a third message came through from "U66" that about 60 nautical miles east of Kinnaird (sic., ? Kinnaird Head), eight enemy battleships, light cruisers, and torpedo-boats had been sighted on a north-easterly course.

These reports gave no enlightenment as to the enemy's purpose. But the varied forces of the separate divisions of the fleet, and their diverging courses did not seem to suggest either combined action or an advance on the German Bight or any connection with our enterprise, but showed a possibility that our hope of meeting with separate enemy divisions was likely to be fulfilled. We were, therefore, all the more determined to keep to our plan. Between 2 and 3 p. m. "L" 9, 14, 16, 21 and 23 ascended for long-distance reconnoissance in the sector north to west of Heligoland. They took no part in the battle that so soon was to follow, neither did they see anything of their own Main Fleet, nor of the enemy, nor hear anything of the battle.

2

THE FIRST PHASE OF THE BATTLE: CRUISER ENGAGEMENT

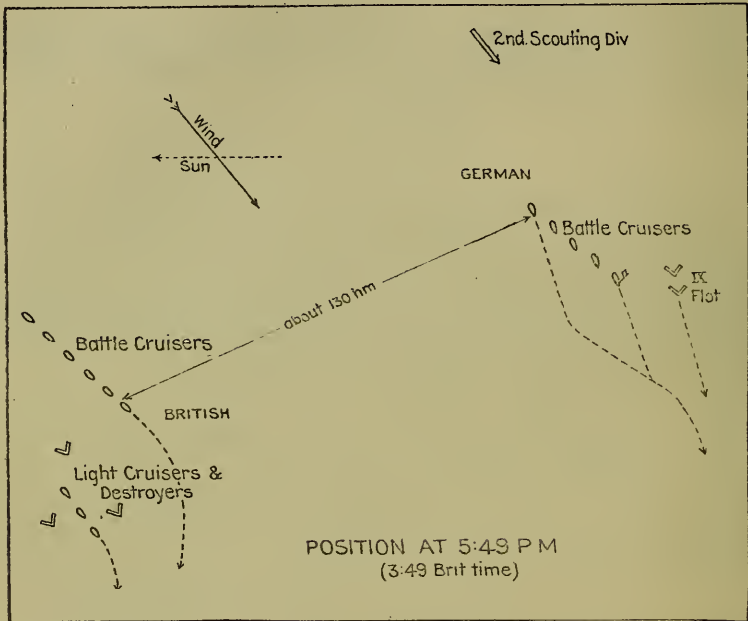
At 4.28 p. m. the leading boat of the 4th Torpedo-Boat Half-Flotilla, "B 109," reported that Elbing, the west wing cruiser on the Chief of Reconnoissance's line, had been sent to examine a steamer about 90 nautical miles west of Bovbjerg, and had sighted some enemy forces. It was thanks to that steamer that the engagement took place; our course might have carried us past the English cruisers had the torpedo-boat not proceeded to the steamer and thus sighted the smoke from the enemy in the west.



As soon as the enemy, comprising eight light cruisers of the "Caroline" type, sighted our forces, he turned off to the north. Admiral Boedicker gave chase with his cruisers. At 5.20 p. m. the Chief of the Reconnoissance then sighted in a westerly direction two columns of large vessels taking an easterly course. These soon showed themselves to be six battle-cruisers, three of the "Lion" class, one "Tiger," and two "Indefatigables," besides numbers of lighter forces. The Chief of Reconnoissance called back Scouting Division II, which he had sent to give chase in the north, and prepared to attack. The enemy deployed to the south in fighting line. It was Vice-Admiral Beatty with the First and Second English Battle-Cruiser Squadrons, consisting of the Lion, Princess

THE BATTLE OF JUTLAND

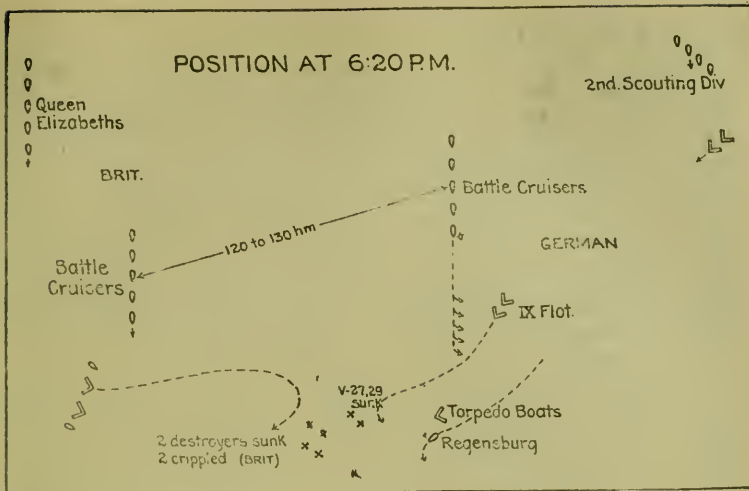
Royal, Queen Mary, Tiger, New Zealand, and Indefatigable. That the enemy deployed to the south was a very welcome fact for us, as if offered the possibility of inducing the enemy to fall back on his own main fleet. The Chief of Reconnaissance therefore followed the movement, maneuvered to get within effective firing range, and opened fire at 5.49 p. m., at a range of about 130 hm.*



The fighting proceeded on a south-easterly course. The Chief of Reconnaissance kept the enemy at effective distance. The batteries fixed their aim well; hits were observed on all the enemy ships. Already at 6.13 p. m., the battle-cruiser *Indefatigable*, the last in the line of the enemy cruisers, sank with a terrible explosion caused by the guns of the *Von der Tann*. Superiority in firing and tactical advantages of position were decidedly on our side up to 6.19 p. m., when a new unit of four or five ships of the "*Queen Elizabeth*" type, with a considerable surplus of speed, drew up from a north-westerly direction, and beginning at a range of 200 hm. joined the fighting. It was the Fifth English Battle Squadron.** This made the situation critical for our cruisers. The new enemy fired with extraordinary rapidity and accuracy, with the greater ease as regards the latter that he met with almost no opposition, as our battle-cruisers were fully engaged with Admiral Beatty's ships.

* Earl Beatty gives the range at about 18,500 yards. (hm. a hectometer,; 100 meters or 109 yards., 2 ft., 9 in.).

**According to English accounts, it comprised the *Barham*, *Warspite*, *Valiant* and *Malaya*. Mention is made of four ships only. According to various observations on our side (by Squadron III and the leader of Scouting Division II), there were *five* ships. If *Queen Elizabeth*, or a similar type of ship, was not in the unit, it is possible that another recently built ship replaced her.



At 6.20 p. m. the fighting distance between the battle-cruisers on both side was about 120 hm., while between our battle-cruisers and those with Queen Elizabeth the distance was something like 180 hm. At this stage Torpedo-Boat Flotilla IX was the only one of the flotillas under the Chief of Reconnaissance that was in a position to attack. The Second Leader of Torpedo-Boats, Commodore Heinrich, on board the Regensburg, and some few boats belonging to Torpedo Flotilla II, were getting up steam with all speed in a diagonal line from the Chief of Reconnaissance's furthest point. The cruisers of Scouting Division II, together with the remaining torpedo flotillas, were forced by the "Queen Elizabeths" to withdraw to the east to escape their fire and had, therefore, in spite of working their engines to the utmost, not been able to arrive in position at the head of the battle-cruisers.

In view of the situation, the Second Leader of the Torpedo-Boats ordered Torpedo Flotilla IX (whose chief, Captain Goehle, had already decided on his own initiative to prepare to attack) to advance to the relief of the battle-cruisers.

At about 6.30 p. m. Torpedo Flotilla IX proceeded to attack, running through heavy enemy firing. Twelve torpedoes were fired on the enemy lines at distances ranging between 95—80 hm. It was impossible to push the attack closer on the enemy, as at the same time that Flotilla IX got to work, eighteen to twenty English destroyers, covered by light cruisers, appeared on the scene to counter-attack and beat off our torpedo-boats. The result was a torpedo-boat fight at close range (1,000—1,500 m.). The Regensburg, together with the boats of Torpedo-Boat Flotilla II that were with her, and the centrally situated guns on the battle-cruisers, then joined in the fight. After about ten minutes the enemy turned away. On our side "V27" and "V29" were sunk, hit by shots from heavy calibre guns. The crews of both the boats were rescued in spite of enemy fire, by "V26" and "S35." On the enemy side two, or perhaps three, destroyers were sunk, and two others so badly damaged that they could not get away, and fell later into the hands

of our advancing Main Fleet. The enemy made no attempt to rescue the crews of these boats.

During the attack by the torpedo-boats, the English battle-cruisers were effectively held in check by the Scouting Division I with heavy artillery, which at the same time maneuvered so successfully that none of the numerous enemy torpedoes observed by Torpedo-Boat Flotilla IX hit their objectives. Towards 6.30 p. m. a powerful explosion was observed on board the third enemy cruiser—the *Queen Mary*. When the smoke from the explosion cleared away the cruiser had disappeared. Whether the destruction was the result of artillery action or was caused by a torpedo from the battle-cruisers or by a torpedo from Torpedo-Boat Flotilla IX can never be ascertained for certain, but most probably it was due to artillery action which caused an explosion of ammunition or oil on board the enemy vessel. It was not until night that I heard of the destruction of the two battle-cruisers.

The attack by Flotilla IX had at all events been successful in so far that for a time it checked the enemy's fire. Admiral Hipper took advantage of this to divert the cruisers to a north-westerly course and thus secure for himself the lead at the head of the cruisers in the new phase of the fight. Immediately following on the attack by the torpedo-boats, the German Main Fleet appeared on the scene of battle just in the nick of time to help the reconnaissance forces in their fight against considerably superior numbers.

3

THE SECOND PHASE OF THE FIGHT: THE PURSUIT

At 4.28 p. m.* about 50 nautical mile west of Lyngoig, on the Jutland coast, the first news of the sighting of enemy light forces was reported to the Main Fleet proceeding in the following order:

Squadrons III, I, II, the flagship at the head of Squadron I, on a northerly course, speed 14 knots—distance between the vessels, 7 hm., distance between the squadrons, 35 hm., the torpedo-boats as U-boat escort for the squadrons, the light cruisers of Scouting Division IV allotted to the Main Fleet to protect their course.

At 5.35 the first report was sent that heavy forces had been sighted. The distance between the Chief of Reconnaissance and the Main Fleet was at that time about 50ⁿ nautical miles. On receipt of this message, the fighting line was opened (that is, the distance between the squadrons was reduced to 1,000 m., and between the vessels to 500 m.), and the order was given to clear the ships for action.

In the fighting line the Commander-in-Chief of the Fleet is not tied to any fixed position. When there is a question of leading several squadrons it is not advisable to take up a position at the head of the line, as it is not possible from there to watch the direction in which the fight develops, as that greatly depends on the movements of the enemy. Being bound to any such position might lead to the Commander-in-Chief finding himself at the rear instead of

*In comparing the time given in the German and English accounts it must be remembered that there is a difference of two hours, for the reason that we reckon according to summer-time in Central Europe, while the difference between ordinary Central Europe and Greenwich time is one hour. Therefore 4.28 German time corresponds to 2.28 English time.

at the head of his assembled line. A position in the centre or at a third of the line (according to the number of units) is more advantageous. In the course of events the place of the eighth ship in the line for the flagship has been tested and approved of.

During the whole time that fighting was going on I had a clear look-out over the whole line and was able to signal with great rapidity in both directions. As the fighting line of the warships was more than 10 km. long, I should not have been able to overlook my entire line from the wing, especially under such heavy enemy firing.

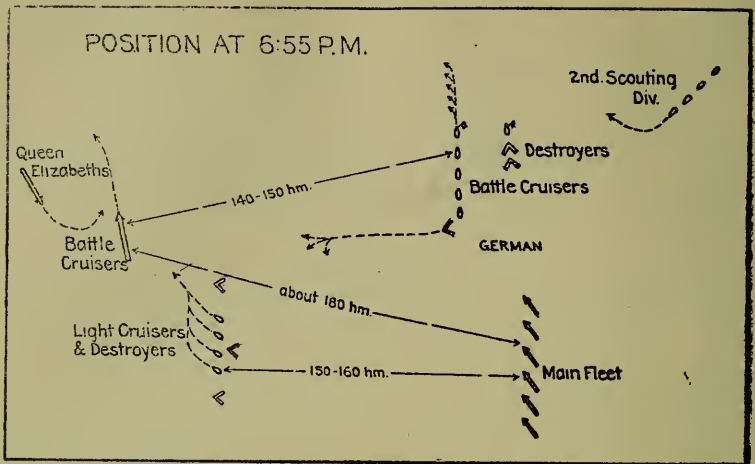
The message received at 5.45 p. m. from the Chief of Reconnaissance that he was engaged with six enemy battle-cruisers on a southeasterly course showed that he had succeeded in meeting the enemy, and as he fought was drawing him closer to our Main Fleet. The duty of the Main Fleet was now to hasten as quickly as possible to support the battle-cruisers, which were inferior as to material, and to endeavour to hinder the premature retreat of the enemy. At 6.5, therefore, I took a north-westerly course at a speed of 15 knots, and a quarter of an hour later altered it to a westerly course in order to place the enemy between two fires, as he, on his southerly course, would have to push through between our line and that of the battle-cruisers. While the Main Fleet was still altering course, a message came from Scouting Division II that an English unit of warships, five ships (not four!) had joined in the fight.

The situation thus was becoming critical for Scouting Division I, confronted as they were by six battle-cruisers and five battleships. Naturally, therefore, everything possible had to be done to get into touch with them, and a change was made back to a northerly course. The weather was extremely clear, the sky cloudless, a light breeze from N. W., and a calm sea. At 6.30 p. m. the fighting lines were sighted. At 6.45 p. m. Squadrons I and III opened fire, while the Chief of Reconnaissance, with the forces allotted to him, placed himself at the head of the Main Fleet.

The light enemy forces veered at once to the west, and as soon as they were out of firing range turned northwards. Whether the fire from our warships had damaged them during the short bombardment was doubtful, but their vague and purposeless hurrying to and fro led one to think that our fire had reached them and that the action of our warships had so surprised them that they did not know which way to turn next.

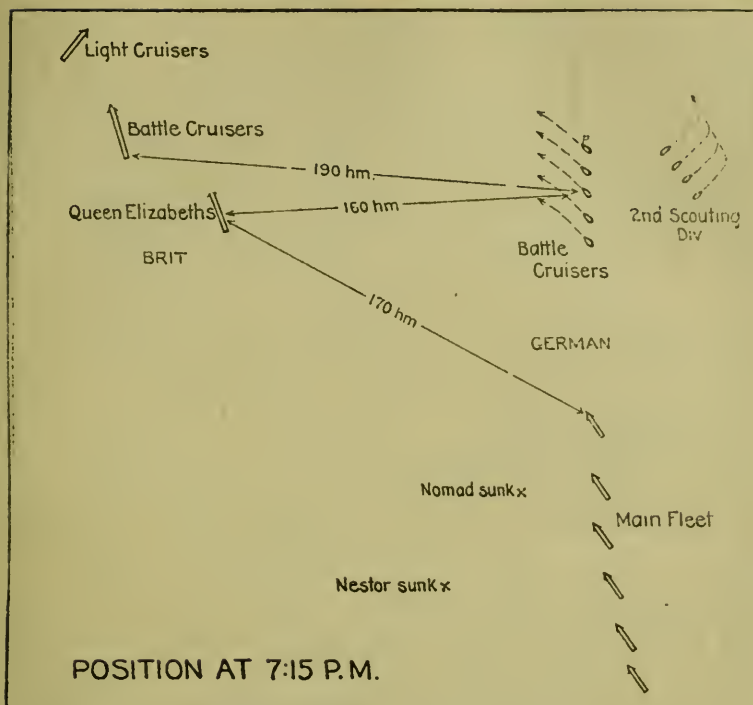
The English battle-cruisers turned to a north-westerly course; Queen Elizabeth and the ships with her followed in their wake, and thereby played the part of cover for the badly damaged cruisers. In so doing, however, they came very much nearer to our Main Fleet, and we came on at a firing distance of 17 km. or less. While both the English units passed by each other and provided mutual cover, Captain Max Schultz, Chief of Torpedo-Boat Flotilla VI, attacked at 6.49 p. m., with the Eleventh Torpedo-Boat Half-Flotilla. The result could not be seen.

The fighting which now ensued developed into a stern chase: our reconnaissance forces pressed on the heels of the enemy battle-cruisers, and our Main Fleet gave chase to the Queen Elizabeth and the ships with her. Our ships in Squadron III attained a speed of over 20 knots, which was also kept up on board the Kaiserin. Just before fire was opened she had succeeded in repairing damage to one of her condensers. By the Friedrich der Grosse, the Fleet



Flagship, 20 knots was achieved and maintained. In spite of this, the enemy battle-cruisers succeeded soon after 7 o'clock in escaping from the fire of Scouting Division I. The Queen Elizabeth and her sister ships also made such good way that they were only under fire from the ships of Scouting Division I and of the Fifth Division (First Half of Squadron III). The hope that one of the ships pursued would be so damaged as to fall a prey to our Main Fleet was not fulfilled, although our firing was effective, and at 7.30 p. m. it was seen that a ship of the "Queen Elizabeth" type after she had been hit repeatedly, drew slowly out of the fighting line with a heavy list to leeward. Two modern destroyers, the Nestor and Nomad, were all that fell to the share of the Main Fleet; they were hit and badly damaged in the attack by Torpedo-Boat Flotilla IX, and were overtaken and sunk by us; the crews were taken prisoner.

At 7.20 p. m., when the fire from Scouting Division I and from the ships of the Fifth Division appeared to grow weaker, the leaders of the Fleet were under the impression that the enemy was succeeding in getting away, and gave orders to the Chief of Reconnaissance and to all the fighting forces "to give chase." Meanwhile, the previously clear weather had become less clear; the wind had changed from N.W. to S.W. Powder fumes and smoke from the funnels hung over the sea and cut off all view from north and east. Only now and then could we see our own reconnaissance forces. Owing to the superior speed of Beatty's cruisers, our own, when the order came to give chase, were already out-distanced by the enemy battle-cruisers and light craft, and were thus forced, in order not to lose touch, to follow on the inner circle and adopt the enemy's course. Both lines of cruisers swung by degrees in concentric circles by the north to a north-easterly direction. A message which was to have been sent by the Chief of Reconnaissance could not be dispatched owing to damage done to the principal and reserve wireless stations on his flagship. The cessation of firing at the head of the line could only be ascribed to the increasing difficulty of observation with the sun so low on the horizon, until finally it became impossible. When, therefore, ene-



my light forces began a torpedo attack on our battle-cruisers at 7.40 p. m., the Chief of Reconnaissance had no alternative but to maneuver and finally bring the unit round to S.W. in an endeavor to close up with Main Fleet, as it was impossible to return the enemy's fire to any purpose.

4

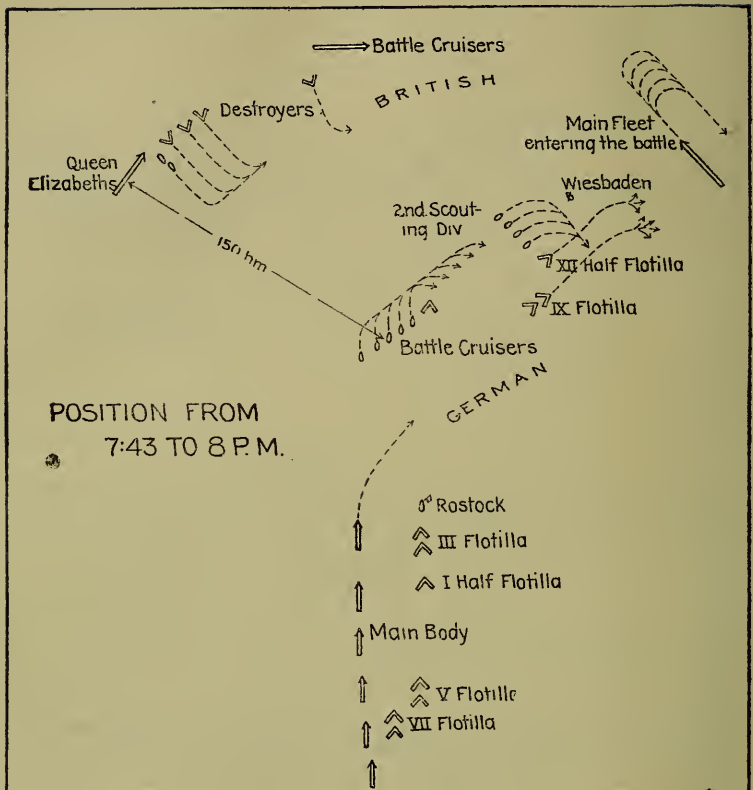
THE THIRD PHASE OF THE FIGHTING: THE BATTLE

I observed almost simultaneously that the admiral at the head of our squadron of battleships began to veer round to starboard in an easterly direction. This was in accordance with the instructions signalled to keep up the pursuit. As the Fleet was still divided in columns, steering a north-westerly course as directed, the order "Leader in Front" was signalled along the line at 7.45 p. m., and the speed temporarily reduced to 15 knots, so as to make it possible for the divisions ahead, which had pushed on at high pressure, to get into position again.

As long as the pursuit was kept up, the movements of the English gave us the direction, consequently our line by degrees veered round to the east. During these proceedings in the Main Fleet, Scouting Division II, under Rear-Admiral Boedicker, when engaged with a light cruiser of the "Calliope" class,* which was

*According to English accounts the light cruiser *Chester* was badly damaged. Her casualties were 31 killed and 50 wounded, and she had four holes just above the water-line.

THE BATTLE OF JUTLAND



set on fire, sighted several light cruisers of the "Town" class, and several big ships, presumably battleships, of which the *Agincourt* was one. Owing to the mist that hung over the water, it was impossible to ascertain the entire strength of the enemy. The group was at once heavily fired on, returned the fire, discharged torpedoes, and turned in the direction of their own Main Fleet. No result could be observed, as artificial smoke[§] was at once employed to protect the cruisers. In spite of the fog the *Wiesbaden* and *Pillau* were both badly hit. The *Wiesbaden* (Captain Reiss) lay in the thick of the enemy fire, incapable of action.

The Chiefs of the 12th and 9th Torpedo-Boat Half-Flotillas who were stationed behind the cruisers, recognising the gravity of the situation, came to the front. Both came under fire from a line of numbers of big ships on a N.W. course, and fired their torpedoes from within 60 hm. of the enemy. Here, too, it was impossible to observe what success was achieved, as dense clouds of smoke hid the enemy from view directly they veered round. But both

[§]Artificial fog or smoke, prepared by a special process at the largest dye-works, and supplied to all the lighter forces to enable them to withdraw from the fire of superior forces.

the above-mentioned commanders reckon that they met with success, having attacked under favourable conditions.

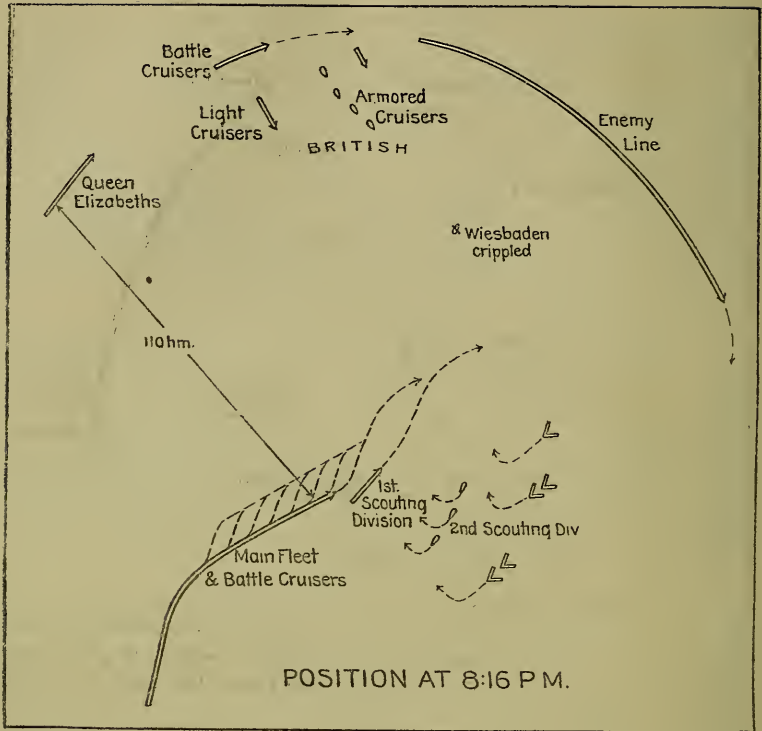
While this encounter with the advance guard of the English Main Fleet was taking place, we, on our flagship were occupied debating how much longer to continue the pursuit in view of the advanced time. There was no longer any question of a cruiser campaign against merchantmen in the Skagerrak, as the meeting with the English fighting forces which was to result from such action had already taken place. But we were bound to take into consideration that the English Fleet, if at sea, which was obvious from the ships we had encountered, would offer battle the next day. Some steps would also have to be taken to shake off the English light forces before darkness fell in order to avoid any loss to our Main Fleet from nocturnal torpedo-boat attacks.

A message was then received from the leader of Scouting Division II that he had been fired on by some newly arrived large ships. At 8.2 p. m. came a wireless: "Wiesbaden incapable of action." On receipt of the message I turned with the Fleet two points to larboard (port) so as to draw nearer to the group and render assistance to the Wiesbaden. From 8.20 onwards there was heavy fighting round the damaged Wiesbaden, and good use was made of the ship's torpedoes. Coming from a north-north-westerly direction, the "Queen Elizabeth" ships and also probably Beatty's battle-cruisers attacked (prisoners, however, stated that after 7.0 p. m. the latter took no part in the fight).

A fresh unit of cruisers (three "Invincibles" and four "Warriors") bore down from the north, besides light cruisers and destroyers. A further message from the torpedo-boat flotillas which had gone to support Scouting Division II, stated that they had sighted more than twenty enemy battleships following a south-easterly course. It was now quite obvious that we were confronted by a large portion of the English Fleet and a few minutes later their presence was notified on the horizon directly ahead of us by rounds of firing from guns of heavy calibre. The entire arc stretching from north to east was a sea of fire. The flash from the muzzles of the guns was distinctly seen through the mist and smoke on the horizon, though the ships themselves were not distinguishable. This was the beginning of the main phase of the battle.

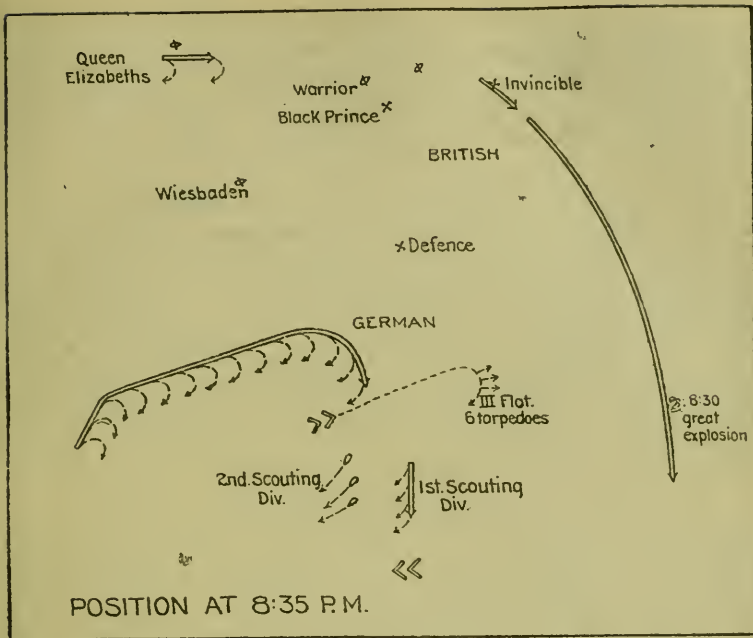
There was never any question of our line veering round to avoid an encounter. The resolve to do battle with the enemy stood firm from the first. The leaders of our battleship squadrons, the Fifth Division turned at once for a running fight, carried on at about 13.000 m. The other divisions followed this movement on orders signalled from the flagship. By this time more than a hundred heavy guns had joined in the fight on the enemy's side, directing fire chiefly at our battle-cruisers and the ships of the Fifth Division (the "Koenig" class). The position of the English line (whose centre we must have faced) to our leading point brought fire on us from three sides. The "Queen Elizabeths" fired diagonally from larboard (port); the ships of the main fleet, which Jellicoe had brought up, from the fore-castle starboard. Many shots were aimed at the Friedrich der Grosse, but the ship was never hit.

During this stage of the fight the cruisers Defence, Black Prince, and Warrior came up from the north, but were all destroyed by the fire from our battleships and our battle-cruisers.



Fire from the Friedrich der Grosse was aimed at one of the three, which in a huge white cloud of steam was blown into the air, at 3,000 m. distance. I observed several enemy hits and consequent explosions on the ships at our leading point. Following the movement of the enemy they had made a bend which hindered free action of our Torpedo-Boat Flotilla II stationed there.

I could see nothing of our cruisers, which were still farther forward. Owing to the turning aside that was inevitable in drawing nearer, they found themselves between the fire of both lines. For this reason I decided to turn our line and bring it on to an opposite course. Otherwise an awkward situation would have arisen round the pivot which the enemy line by degrees was passing, as long-distance shots from the enemy would certainly have hit our rear ships. As regards the effectiveness of the artillery, the enemy was more favourably situated, as our ships stood out against the clear western horizon, whereas his own ships were hidden by the smoke and mist of the battle. A running artillery fight on a southerly course would therefore not have been advantageous to us. The swing round was carried out in excellent style. At our peace maneuvers great importance was always attached to their being carried out on a curved line and every means employed to ensure the working of the signals. The trouble spent was now well repaid: the cruisers were liberated from their cramped position and enabled to steam away south and appeared, as soon as



the two lines were separated, in view of the flagship. The torpedo-boats, too, on the leeward side of the fire had room to move to the attack and advanced.

While the veering round of the line was proceeding, two boats of Torpedo-Boat Flotilla III ("G88" and "V73") and the leading boat of Torpedo-Boat Flotilla I ("S32") had attacked. The remaining boats of Torpedo-Boat Flotilla III had ceased the attack on an order to retire from the leader. The weakening of the enemy fire had induced the First Leader to give the order, being persuaded that the enemy had turned away and that the flotilla, which would be urgently needed in the further development of the battle, would find itself without support. Owing to the shortening of the line at the head, the boats of the other flotillas were not able to attack. One division (Torpedo-Boat Flotillas IX and VI) had just returned from the 8 o'clock attack. The enemy line did not follow our veer round. In the position it was to our leading point, it should have remained on, and could have held us still further surrounded if by a simultaneous turn to a westerly course it had kept firmly to our line. It may be that the leader did not grasp the situation, and was afraid to come any nearer for fear of torpedo attacks. Neither did any of the other officers on the enemy side think of holding firmly to our line, which would have greatly impeded our movements and rendered a fresh attack on the enemy line extremely difficult.

Immediately after the line was turned the enemy fire ceased temporarily, partly because the artificial smoke sent out by the torpedo-boats to protect the line—the battle-cruisers in particular—greatly impeded the enemy's view, but chiefly no doubt on account of the severe losses the enemy had suffered.

Losses that were observed for certain as sunk were: a ship of the "Queen Elizabeth" class (name unknown), a battle-cruiser (Invincible), two armoured cruisers (Black Prince and Defence), the light cruiser Shark, and one marked "O24." Heavily damaged and partially set on fire were: One cruiser (Warrior, sunk later), three light cruisers, three destroyers (of which the Acasta was one).

On our side "V48" was the only destroyer sunk, the Wiesbaden was rendered incapable, and the Luetzow so badly damaged that the Chief of Reconnaissance was subsequently compelled at 9 p. m. to leave the ship under the enemy's fire, and transfer to the Moltke. The leadership of Scouting Division I was thus made over to the Derfflinger (Captain Hartog) until 11 p. m. The other battle-cruisers and the leading ships of Squadron III had also suffered, but kept their place in the line. No one reported inability to do so; I was, therefore, able to reckon on their being fully prepared to fight. After the enemy was forced to cease firing on our line steering S.W., he flung himself on the already heavily damaged Wiesbaden. The ship put up a gallant fight against the overwhelmingly superior forces, which was clearly to be seen as she had emerged from out of the clouds of smoke and was distinctly visible.

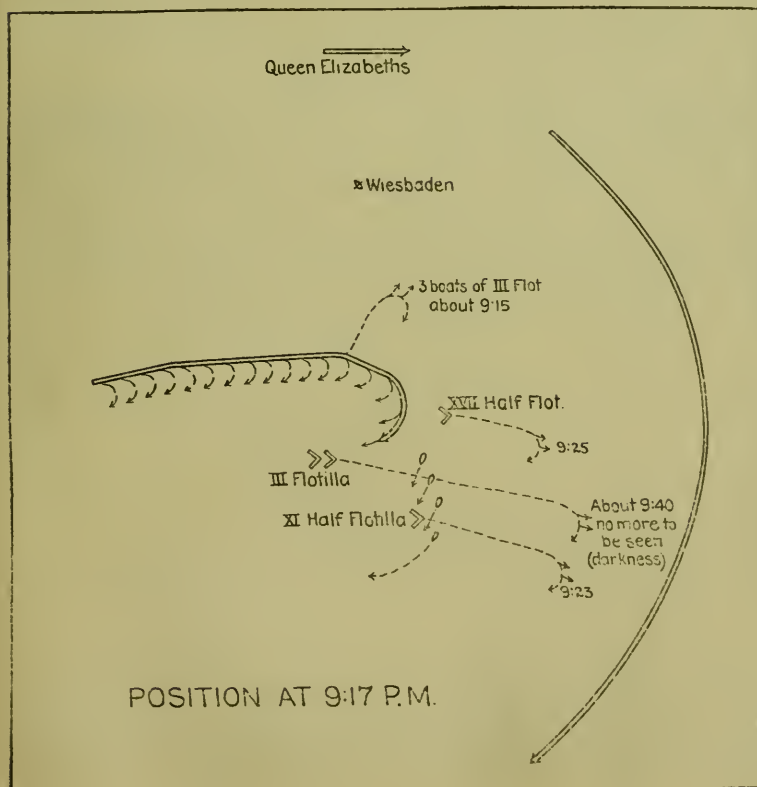
It was still too early for a nocturnal move. If the enemy followed us our action in retaining the direction taken after turning the line would partake of the nature of a retreat, and in the event of any damage to our ships in the rear, the Fleet would be compelled to sacrifice them or else to decide on a line of action enforced by enemy pressure, and not adopted voluntarily, and would therefore be detrimental to us from the very outset. Still less was it feasible to strive at detaching oneself from the enemy, leaving it to him to decide when he would elect to meet us the next morning. There was but one way of averting this — to force the enemy into a second battle by another determined advance, and forcibly compel his torpedo-boats to attack. The success of the turning of the line while fighting encouraged me to make the attempt, and decided me to make still further use of the facility of movement. The maneuver would be bound to surprise the enemy, to upset his plans for the rest of the day, and if the blow fell heavily it would facilitate the breaking loose at night. The fight of the Wiesbaden helped also to strengthen my resolve to make an effort to render assistance to her and at least save the crew.

Accordingly, after we had been on the new course about a quarter of an hour, the line was again swung round to starboard on an easterly course at 8.55 p. m. The battle-cruisers were ordered to operate with full strength on the enemy's leading point, all the torpedo-boat flotillas had orders to attack, and the First Leader of the torpedo-boats, Commodore Michelsen, was instructed to send his boats to rescue the Wiesbaden's crew. The boats told off for this purpose were compelled to relinquish the attempt. The Wiesbaden and the boats making for her were in the midst of such heavy fire that the leader of the torpedo-boats thought it useless to sacrifice his boats. In turning to go back "V73" and "G88" together fired off four torpedoes at the "Queen Elizabeths."

The battle that developed after the second change of course and led to the intended result very soon brought a full resumption of the firing at the van which, as was inevitable, became the same running fight as the previous one, in order to bring the whole of the guns into action. This time, however, in spite of "crossing the

T," the acknowledged purpose was to deal a blow at the centre of the enemy line. The fire directed on our line by the enemy concentrated chiefly on the battle-cruisers and the Fifth Division. The ships suffered all the more as they could see but little of the enemy beyond the flash of fire at each round, while they themselves apparently offered a good target for the enemy guns. The behaviour of the battle-cruisers is specially deserving of the highest praise; crippled in the use of their guns by their numerous casualties, some of them badly damaged, obeying the given signal, "At the enemy," they dashed recklessly to the attack.

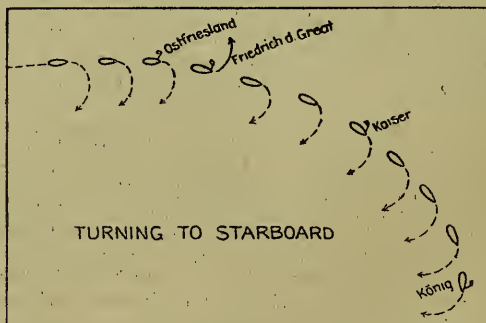
The conduct of Squadron II (Rear-Admiral Behncke) and the action of the ships of the Fifth Division are equally worthy of recognition. They, together with the battle-cruisers, bore the brunt of the fight, and thus rendered it possible for the torpedo-boat flotillas to take so effective a share in the proceedings. The systematic procedure of our ships in the line was a great help to the flotillas on their starboard side in opening the attack. The first to attack were those ahead with the cruisers, the boats of Flotillas VI and IX. Next came Flotillas III and V from the Main Fleet. Flotilla II was kept back by the Second Leader of torpedo-boats,



for fear it might be left unprotected behind VI and IX. This action was justified by the course of events. The 1st Torpedo Half-Flotilla and a few boats from Flotillas VI and IX were occupied in covering the damaged Luetzow. There was no longer any opportunity for an attack by Flotilla VII which had been in the rear of our fighting line. As they advanced Flotillas VI and IX were met by the heavy enemy fire that until then had been directed against the battle-cruisers; they carried the attack to within 70 hm. against the centre of a line comprising more than twenty large battleships steering in a circle E.S.E. to S., and opened fire under favourable conditions. In the attack "S35" was hit midships and sank at once. All the other boats returned, and in doing so sent out dense clouds of smoke between the enemy and our own Main Fleet. The enemy must have turned aside on the attack of Flotillas VI and IX. Flotillas III and V that came after found nothing but light craft, and had no opportunity of attacking the battleships. The action of the torpedo-boat flotillas had achieved its purpose.

At 9.17 p. m., therefore, the line was again for the third time swung round on to a westerly course, and this was carried out at the moment when the flagship *Friedrich der Grosse* was taking a southerly course close by the turning point. Although the signal to swing round hung on the starboard side and was being carried out by the neighboring ships, I made the Chief of the *Friedrich der Grosse* carry out the turn to larboard (port).

This might have led the ships following behind to think that from a difficult situation in carrying out the maneuver was rightly understood by Vice-Admiral Ehrhardt Schmidt in the *Ostfriesland*, the Leader of Squadron I. He did not wait, therefore, for the carrying out of the movement from the rear — which is the general rule to avoid all danger of collision — but himself gave the lead in the turning of his squadron by starting the turn to starboard with the *Ostfriesland* — and thus forced his ships round. This action was a very satisfactory proof of the capable handling of the ships and the leaders' intelligent grasp of the situation.



After the change to a westerly course the Fleet was brought round to a south-westerly, southerly, and finally to a south-easterly course to meet the enemy's encircling movement and keep open a way for our return. The enemy fire ceased very soon after we had swung round and we lost sight of our adversary. The enemy's casualties at this stage of the fighting cannot be given.

Excepting the effects of direct hits which we were able to confirm from the flames of explosions, the enemy has only admitted the damage to the Marlborough by torpedoes.* On our side all the ships were in a condition to keep up the speed requisite for night work (16 knots) and thus keep their place in the line.

5

NIGHT MOVEMENTS AND BATTLES

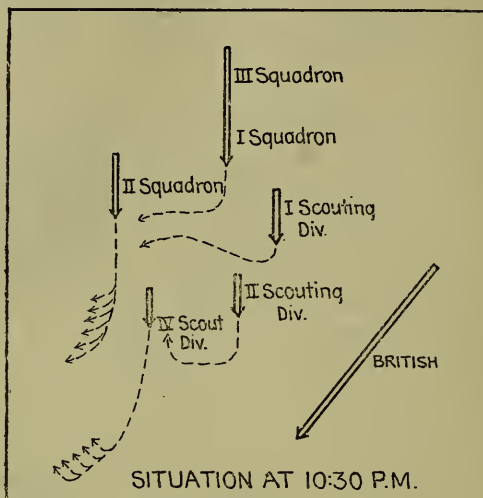
Twilight was now far advanced, and it was only by personal observation that I could assure myself of the presence and external condition of those ships that chiefly had been under fire, and especially that the Luetzow was able to keep with the unit. At 9.30 the battle-cruiser was seen to larboard (port) of the flagship, and had reported that she could do 15 knots. The report made by the torpedo-boat flotilla as to the enemy's strength and the extension of his firing line made it quite certain that we had been in battle with the entire English Fleet. It might safely be expected that in the twilight the enemy would endeavour by attacking with strong forces, and during the night with destroyers, to force us over to the west in order to open battle with us when it was light. He was strong enough to do it. If we could succeed in warding off the enemy's encircling movement, and could be the first to reach Horns Reef, then the liberty of decision for the next morning was assured to us. In order to make this possible all flotillas were ordered to be ready to attack at night, even though there was a danger when day broke of their not being able to take part in the new battle that was expected. The Main Fleet in close formation was to make for Horns Reef by the shortest route, and, defying all enemy attacks, keep on that course. In accordance with this, preparations for the night were made.

The Leaders of the torpedo-boats were instructed to arrange night attacks for the flotillas. At 9.20 a southerly course was ordered. In changing to this course Squadron II had fallen out on the starboard side as the leading ship of Squadron I fell into the new course, not being able to fix the position of Squadron II. Owing to the latter's inferior speed it fell behind the ships of Squadrons III and I in the last part of the day's battle. Squadron II now attempted, at full speed and maneuvering to larboard (port), to resume its place in front of Squadron I, which was its rightful position, after the Fleet had been turned. It came, therefore, just in time to help our battle-cruisers that were engaged in a short but sharp encounter with the enemy shortly before it was quite dark. While Scouting Divisions I and II were trying to place themselves at the head of our line they were met at 10.20 by heavy fire coming from a south-easterly direction. Nothing could be seen of the enemy beyond the flash of the guns at each round. The ships, already heavily damaged, were hit again without being able to return the fire to any purpose. They turned back, therefore, and passed in between Squadrons II and I to leeward of the firing.

The head of Squadron I followed the movements of the cruisers, while Squadron II (Rear-Admiral Mauve) stood by and took the enemy's fire. When Squadron II became aware that the failing light made any return fire useless it withdrew, thinking to at-

*Admiral Jellicoe admits that torpedoes reached his line, but claims to have escaped further damage by the clever handling of his ships. Our assumption that he had already turned back before the attack by the torpedo-boats it thus confirmed.

tract the enemy to closer quarters with Squadron I. The enemy did not follow, but ceased firing.



Almost at the same time the Leader of Scouting Division IV. Commodore von Reuther, under similar conditions, had been engaged in a short encounter with four of five cruisers, some of them ships of the "Hampshire" class.

Following on this attack, we took a south-easterly course which was at once seen to be necessary and adopted by Squadron I, bringing Squadron II again on the starboard side of the Fl et. In view of the fact that the leading ships of the Main Fleet would chiefly have to ward off the attacks of the enemy, and in order that at daybreak there should be powerful vessels at the head, Squadron II was placed in the rear. At 11 p. m. the head of the line stood at 36, 37 North Latitude, and 5, 30 East longitude. At 11.6 p. m. the order for the night was "Course S.S.E. $\frac{1}{4}$ E, speed 16 knots."

Out of consideration for their damaged condition, Scouting Division I was told off to cover the rear, Division II to the vanguard and the IVth to cover the starboard side. The Leaders of the torpedo-boat forces placed the flotillas in an E.N.E to S.S.W. direction, which was where the enemy Main Fleet could be expected. A great many of the boats had fired off all their torpedoes during the battle. Some were left behind for the protection of the badly damaged Luetzow; others were retained by the flotilla leaders in case of emergency. The rescue of the crews of the Elbing and Rostock was due to that decision.

The Second, Fifth and Seventh, and part of the Sixth and Ninth were the only Flotillas that proceeded to the attack; the boats had various nocturnal fights with enemy light forces. They never sighted the Main Fleet. At 5 a. m. on June 1 "L24" sighted a portion of the Main Fleet in Jammer Bay. It was as we surmised—after the battle the enemy had gone north. Flotilla II, which had been stationed at the most northerly part of the sector,

was forced back by cruisers and destroyers, and went round by Skagen; at 4 o'clock when day broke the other flotillas collected near the Main Fleet.

The battleship squadrons proceeded during the night in the following order: Squadron I, Flagship of the Fleet, Squadron III and Squadron II. Squadrons I and II were now in reversed positions; that is to say, the ships previously in the rear were now at the van.

Other attempts to bring the admirals ahead were abandoned owing to the darkness and lack of time. The conduct of the line was entrusted to Captain Redlich on the Westfalen. The enemy attacked from the east with both light and heavy forces during the night almost without ceasing. Scouting Divisions I and II and the ships in Squadron I in particular were to ward off the attacks. The result was excellent. To meet these attacks in time, bring the enemy under fire and by suitable maneuvering evade his torpedoes, demanded the most careful observation on board the vessels. Consequently the line was in constant movement, and it required great skill on the part of the commanders to get into position again, and necessitated a perpetual look-out for those maneuvering just in front of them. Very little use was made of the searchlights. It had been proved that the fire from the attacking boats was aimed chiefly at these illuminated targets. As our light guns and the navigation control on the ships were close to the searchlights, and because of the better view to be obtained the officers and men on duty there would not take cover, several unfortunate casualties occurred. On board the Oldenburg the commander, Captain Hoepfner, was severely wounded by a shell, and several officers and many of the crew were killed.

Utterly mistaking the situation, a large enemy cruiser with four funnels came up at 2 a. m. (apparently one of the "Cressy" class), and was soon within 1,500 metres of Squadron I's battleships, the Thuringen and Ostfriesland. In a few seconds she was on fire, and sank with a terrible explosion four minutes after opening fire. The destruction of this vessel, which was so near that the crew could be seen rushing backwards and forwards on the burning deck while the searchlights disclosed the flight of the heavy projectiles till they fell and exploded, was a grand but terrible sight. Squadron I reported during the night that after carrying out an evading maneuver the Nassau had not returned in her place, and as she did not answer a call it was feared she had been torpedoed. Towards morning, however, there was a faint wireless from her reporting that she was standing by the Vyl Lightship at Horns Reef, and during the night had rammed and cut through a destroyer. After this exploit the commander preferred not to return to our darkened line but made for the morning's rendezvous.

A careful estimation showed that during the night one battleship, one light cruiser and seven destroyers were sunk on the enemy's side, and several battle-cruisers and destroyers badly damaged. The 2nd Division of Squadron I at the head of the line were specially successful in the defence they put up against torpedo attacks, as they themselves accounted for six destroyers.

On our side the old light cruiser *Frauenlob*, the battleship *Pommern* and "V4" were sunk; *Rostock* and *Elbing* were abandoned and blown up. At 12.45 a. m. the *Frauenlob* (Captain Georg Hoffmann), during a fight between Scouting Division IV and four

cruisers of the "Town" class, was hit by a torpedo and, according to the accounts of the few survivors, went down fighting to the last.

The Pommern (Captain Boelken) was torpedoed at 4.20 a. m. and went down with a violent explosion. Unfortunately none of the crew could be saved, as the wreckage drifted away so quickly that nothing was seen on the water by a ship following at 500 m. distance.

At 4.50 a. m. "V4" struck an enemy mine; the crew was not saved. At 1.30 a. m. the Rostock and Elbing to the larboard (port) of the head of Squadron I were engaged in a fight with destroyers, but had finally to withdraw from the enemy's torpedoes and break through Squadron I's line, so as not to impede the firing from the ships of the line. While doing this the Rostock was hit by a torpedo, and the Elbing and Posen collided. Both cruisers were put out of action. The Rostock kept afloat till 5.45 a. m., but as enemy cruisers were then sighted she was blown up, the entire crew and the wounded having previously been taken off by the boats of Flotilla III. The crew of the Elbing was also taken over by a boat belonging to Flotilla III. The Commander, Captain Madlung, the First Officer, the Torpedo Officer and a cutter's crew remained on board to keep the ship afloat as long as possible. When, however, enemy forces were sighted at 4 a. m. the Elbing was also blown up. The remainder of the crew got away in the cutter and were subsequently picked up by a Dutch fishing-smack and returned home via Holland.

The Luetzow was kept above water until 3.45 a. m. The Koenig, the rear ship of the Fleet, lost sight of her at 11.15 p. m. The vessel was at last steered from the stern. All efforts to stop the water pouring in were fruitless; the fore part of the ship had been too badly damaged, and she had at last 7,000 tons of water in her. The screws revolved out of the water, and she had to be given up. The crew with all the wounded were taken off by the torpedo-boats "G40," "G37," "G38" and "V45," and the Luetzow was sunk by a torpedo. Altogether the four boats had 1,250 men from the Luetzow on board. Twice they encountered enemy cruisers and destroyers, but on each occasion, led by the senior officer, Commander Beitzen (Richard), they attacked and successfully made their way into the German Bight. In the last engagement "G40" had her engines hit and had to be towed.

When this report reached the Main Fleet the Second Leader of Torpedo-Boats on the Regensburg turned at once, regardless as to whether he might meet with superior English forces or not, and took over the towing party. "S32," Leader of Flotilla I (Captain Froehlich), was hit in her boiler at 1 a. m. and rendered temporarily useless. By feeding the boiler with sea water the captain succeeded, however, in taking the boat into Danish waters. From thence she was towed through the Nordmann Deep by torpedo-boats dispatched to her assistance.

These events prove that the English Naval forces made no effort to occupy the waters between the scene of battle and Horns Reef.

It was only during the night that there was opportunity for the ships to report on the number of prisoners they had on board and to gather from them some idea of the enemy's losses. Then I learned that the Warspite, which we had observed to be badly

damaged in the battle, was sunk. Among other vessels reported sunk were the battle-cruisers *Queen Mary*, *Indefatigable*, and *Invincible*. This was all news to me, and convinced me that the English losses were far more considerable than our own.

On arriving at Horns Reef at 5 a. m. I decided to remain there and await the *Luetzow*. I had not then heard of her fate. From 11.30 p. m. on, the vessel had been able to do 13 knots. The last report from her was at 1.55 a. m.—transmitted by convoy-boat "G40"—stating that she was making very slow way, that the means of navigation were limited, that the gun power was reduced to a fifth, course south, station E 16. At 5.30 a. m. came a message that the *Luetzow* had been abandoned at 4 a. m.

After that I had no difficulty in drawing my own conclusions. As the enemy did not come down from the North, even with light forces, it was evident that he was retiring, especially as nothing more could be seen of him notwithstanding that his torpedo-boats were about until dawn.

6

THE SITUATION ON THE MORNING OF JUNE 1

"L" 11, 13, 17, 22 and 22 had gone up during the night for an early reconnaissance. At 5.10 a. m. "L11" reported a squadron of twelve English battleships, numerous light craft and destroyers on a northerly course about the centre of the line Terschelling—Horns Reef, and immediately afterwards enemy battleships and battle-cruisers north of the first unit. The airship was heavily fired at but kept in touch until compelled to retire and lost sight of the enemy in the thick atmosphere. The airship's reports taken from its war diary are as follows:

Reconnaissance Trip of "L11" on June 1, 1916

"On June 1 at 1.30, after midnight 'L11' went up at Nordholz with the following orders: As fourth airship to cover flank of High Sea forces, course N.W. to W. by Heligoland. Full crew on board, fresh south-westerly wind, visibility limited owing to ground fog and later to a fog-like atmosphere high up extending over 2 or at most 4 nautical miles. Heligoland was not visible through the fog. At 5 a. m. clouds of smoke were seen north of the ship in Square O 33 B and were made for. At 5.10 it was possible to make out a strong enemy unit of twelve large warships with numerous lighter craft steering north-north-east full speed ahead. To keep in touch with them 'L11' kept in the rear and sent a wireless report, circling round eastwards. At 5.40 a. m. east of the first unit the airship sighted a second squadron of six big English battleships with lighter forces on a northerly course; when sighted, they turned by divisions to the west, presumably to get in contact with the first unit. As this group was nearer to the Main Fleet than the first one, 'L11' attached itself to it, but at 5.50 a group of three English battle-cruisers and four smaller craft were sighted to the north-east, and, cruising about south of the airship, put themselves between the enemy Main Fleet and 'L11.' Visibility was so poor that it was extremely difficult to keep in contact. For the most part only one of the units was visible at a time, while, apparently, the airship at an altitude of 1,100—1,900 m. was plainly visible to the enemy, against the rising sun.

"At 5.15, shortly after sighting the first group of battleships, the enemy opened fire on the airship from all the vessels with anti-aircraft guns and guns of every calibre. The great turrets fired broadsides; the rounds followed each other rapidly. The flash from the muzzles of the guns could be seen although the ships were hidden by the smoke. All the ships that came in view took up the firing with the greatest energy, so that 'L11' was sometimes exposed to fire from 21 large and numbers of small ships. Although the firing did not take effect, that and the shrapnel bursting all around so shook the ship's frame that it seemed advisable to take steps to increase the range. The firing lasted till 6.20 a. m. At that time the battle-cruisers bearing down from S. W. within close distance of 'L11' forced her to retire to N. E. to avoid their fire. At the same time the visibility became worse and the enemy was lost to view.

"'L11' again took a northerly course and went as low down as 500 metres, in the hope of better visibility. It was impossible to see beyond 1 to 2 nautical miles, and as under these conditions no systematic plan for keeping in contact could be made, N. and S. course was followed so as to keep between the enemy and our own Main Fleet. The enemy did not come in sight again.

"At 8 a. m. the Commander-in-Chief of the High Sea Fleet dismissed the airship, and 'L11' returned. On the way back the ship came across a number of our own torpedo-boats exchanging bases, and messages were given for further transmission. The airship remained close to those boats as far as Sylt. Landed at Nordlitz at 2 p. m."

At 4 a. m., 50 nautical miles west of Bovbjerg, "L24" sighted a flotilla of enemy destroyers, was fired at and returned the fire with bombs, then got away further north, and at 5 a. m. discovered a unit of twelve ships in Jammer Bay, steaming rapidly to the south. It was impossible to keep in contact for further reconnaissance as there was a bank of cloud as low down as 800 m.

From the Main Fleet itself no signs of the enemy were visible at daybreak. The weather was so thick that the full length of a squadron could not be made out. In our opinion the ships in a south-westerly direction as reported by "L11" could only just have come from the Channel to try, on hearing the news of the battle, to join up with their Main Fleet and advance against us. There was no occasion for us to shun an encounter with this group, but owing to the slight chance of meeting on account of visibility conditions, it would have been a mistake to have followed them. Added to this the reports received from the battle-cruisers showed that Scouting Division I would not be capable of sustaining a serious fight, besides which the leading ships of Squadron III could not have fought for any length of time, owing to the reduction in their supply of munitions by the long spell of firing. The Frankfurt, Pillau and Regensburg were the only fast light cruisers now available, and in such misty weather there was no depending on aerial reconnaissance. There was, therefore, no certain prospect of defeating the enemy reported in the south. An encounter and the consequences thereof had to be left to chance. I therefore abandoned the idea of further operations and ordered the return to port.

On the way back, west of List, the Ostfriesland, at 7.30 a. m., struck a mine, one that evidently belonged to a hitherto unknown and recently laid enemy minefield. The damage was slight; the vessel shipped 400 tons of water, but her means of navigation did

not suffer, and she was able to run into harbour under her own steam. I signalled, "Keep on." The last ships passed through the area without coming across further mines.

Several submarine attacks on our returning Main Fleet failed entirely, thanks partly to the vigilance of the airmen who picked up the Main Fleet over List, and escorted them to the mouth of the river. During the course of the day all the ships and boats were safely in their haven. Special mention must be made of the bringing-in of the Seydlitz (Captain von Egidy) badly damaged at her bows. That the vessel ever reached the harbour is due to the remarkable seamanship of her commander and crew. Finally she was run astern into the dock at Wilhelmshaven.

The U-boats lying off English harbours were told to remain at their posts a day longer. At 6.20 p. m., 60 miles north of Terschelling, the "U46" came across a damaged vessel of the "Iron Duke" class (the Marlborough). She was, however, so well protected that it would have been impossible to get within firing distance of her. A torpedo was fired, but failed to reach the objective. Among the U-boats lying off enemy harbours the "U21" on May 31 and "U22" on June 1 both succeeded in hitting a destroyer. In each case, however, the sinking could not be observed owing to enemy counter-action. Besides this, one of our minelayers, occupied in laying mines west of the Orkney Islands, achieved an important success. The English armoured cruiser Hampshire (11,000 tons) struck one of these mines on June 5 and sank; with her perished Field-Marshal Lord Kitchener and all his staff.

LOSSES ON BOTH SIDES

According to careful estimation made by us the enemy lost:

1 Dreadnaught of "Queen Elizabeth" class	Tons. 28,500
3 Battle-cruisers (Queen Mary, Indefatigable and Invincible)	63,000
4 Armoured Cruisers (Black Prince, Defence, Warrior and one of the "Cressy" type)	53,700
2 Light Cruisers	9,000
13 Destroyers	15,000
Total	169,200
We lost:	
1 Battle-cruiser (Luetzow*)	26,700
1 older Battleship (Pommern)	13,200
4 Light Cruisers (Wiesbaden, Elbing, Rostock and Frauenlob)	17,150
5 Torpedo-boats	3,680
Total	60,730

The enemy's were almost complete losses, whereas we had rescued the crews of the Luetzow, Elbing, Rostock and half of those of the torpedo-boats.

*In my first report of the battle sent to the Admiralty at Berlin the loss of the Luetzow was mentioned. The announcement of this loss was suppressed by the Naval Staff, though not at my request. The enemy could not have seen the ship go down. In the interests of naval warfare it was right to suppress the news. Unfortunately the secrecy observed produced the impression that it was necessary to enlarge our success to that extent.

Our losses in personnel amounted to: 2,400 killed; 400 wounded.

The enemy's losses may be estimated at over 7,000 killed.

According to a list which he added to his report of June 18, 1916, Admiral Jellicoe endeavoured to exaggerate our losses in the following manner:

BATTLESHIPS OR BATTLE-CRUISERS

	Correct facts.
2 Battleships, "Dreadnaught" type (certain)	none
1 Battleship, "Deutschland" type (certain)	one
1 Battleship or Battle-cruiser (probable)	one
1 Battleship, "Dreadnaught" type (probable)	none
LIGHT CRUISERS	
4 Light cruisers (certain)	four
1 Large ship or light cruiser (certain)	none
TORPEDO-BOAT DESTROYERS	
6 Torpedo-boat destroyers (certain)	five
3 Torpedo-boat destroyers (probable)	none
SUBMARINES	
1 Submarine (certain)	none
3 Submarines (probable)	none

With regard to the submarines he was totally mistaken, as none took part in the battle. I sent my final impressions of the battle in a written report of 4-7 16 to H.M. the Emperor as follows:

"The success achieved is due to the eagerness in attack, the efficient leadership through the subordinates, and the admirable deeds of the crews full of an eminently warlike spirit. It was only possible owing to the excellence of our ships and arms, the systematic peace-time training of the units, and the conscientious development on each individual ship. The rich experience gained will be carefully applied. The battle has proved that in the enlargement of our Fleet and the development of the different types of ships we have been guided by the right strategical and tactical ideas, and that we must continue to follow the same system. All arms can claim a share in the success. But, directly or indirectly, the far-reaching heavy artillery of the great battleships was the deciding factor, and caused the greater part of the enemy's losses that are so far known, as also it brought the torpedo-boat flotillas to their successful attack on the ships of the Main Fleet. This does not detract from the merits of the flotillas in enabling the battleships to slip away from the enemy by their attack. The big ship—battleship and battle-cruiser—is therefore, and will be, the main strength of naval power. It must be further developed by increasing the gun calibre, by raising the speed, and by perfecting the armour and the protection below the water-line.

"Finally, I beg respectfully to report to your Majesty that by the middle of August the High Sea Fleet, with the exception of the Derfflinger and Seydlitz, will be ready for fresh action. With a favourable succession of operations the enemy may be made to suffer severely, although there can be no doubt that even the most successful result from a high sea battle will not compel England to make peace. The disadvantages of our geographical situation as compared with that of the Island Empire and the enemy's vast material superiority cannot be coped with to such a de-

gree as to make us masters of the blockade inflicted on us, or even of the Island Empire itself, not even were all the U-boats to be available for military purposes. A victorious end to the war at not too distant a date can only be looked for by the crushing of English economic life through U-boat action against English commerce. Prompted by the convictions of duty, I earnestly advise Your Majesty to abstain from deciding on too lenient a form of procedure on the ground that it is opposed to military views, and that the risk of the boats would be out of all proportion to the expected gain, for, in spite of the greatest conscientiousness on the part of the Chiefs, it would not be possible in English waters, where American interests are so prevalent, to avoid occurrences which might force us to make humiliating concessions if we do not act with the greatest severity."

I followed up my report on the battle with a more detailed account on July 16, 1916, after Admiral Jellicoe's report had appeared in the English Press. I quote here from the above-mentioned account:

"Admiral Jellicoe's report, published in the English Press, confirms as follows the observations made by us:

1

Grouping of the English Forces

Under Vice-Admiral Beatty:

- 1st and 2nd Battle-Cruiser Squadrons.
- 5th Battle Squadron ("Queen Elizabeths").
- 1st, 2nd and 3rd Light Cruiser Squadrons.
- 1st, 9th, 10th and 13th Destroyer Flotillas.

Admiral Jellicoe led:

- 1st, 2nd and 4th Battle Squadrons (Fleet Flagship at the head of 4th Battle Squadron).
- 3rd Battle-Cruiser Squadron ("Invincibles").
- 1st and 2nd Cruiser Squadrons.
- 4th Light Cruiser Squadron.
- 4th, 11th and 12th Destroyer Flotillas.

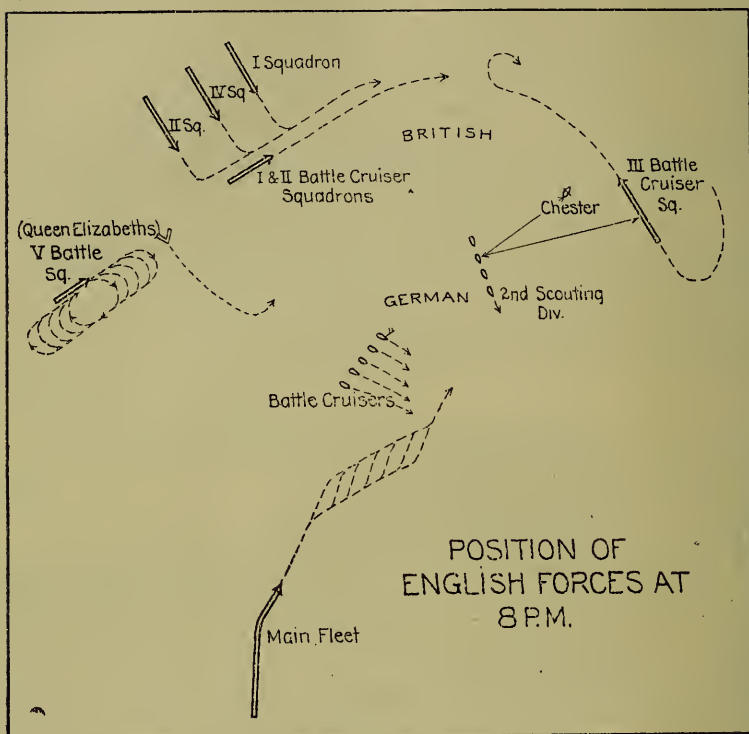
2

Intervention in the Battle by the English Main Fleet

"When he first had news that the enemy was sighted, Admiral Jellicoe was north-west of Admiral Beatty's forces. He thereupon advanced at full speed in column formation on a S.E. course, put the 1st and 2nd Cruiser Squadrons for reconnaissance at the head of his formation, and sent forward the 3rd Battle Cruiser Squadron (apparently reinforced by the Agincourt*), to support Admiral Beatty. The 3rd Battle-Cruiser Squadron passed east of Admiral Beatty's leader at 7.30 p. m.; they heard in the south-west the thunder of guns, and saw the flashes, sent out the light cruiser Chester to reconnoitre, and themselves took a N.W. course. Shortly before 8 o'clock the Chester encountered our Scouting Division II and was set on fire by them. After pursuing the Chester, Scouting Division II came across the 3rd Battle-Cruiser Squadron, which opened fire on them. The attacks at 8 p. m. by our Torpedo-Boat Flotilla IX and the 12th Half-Flotilla were launched against this 3rd Battle-Cruiser Squadron.

*Observed by Scouting Division II.

"Admiral Beatty sighted the 3rd Battle-Cruiser Squadron at 8.10 p. m., and at 8.21 p. m. had it ahead of the 1st and 2nd Battle-Cruiser Squadrons he was leading.



"At 7.55 p. m. Admiral Jellicoe sighted the fire from the guns. It was impossible for him to make out the position of our Fleet. The difference between his and Admiral Beatty's charts added to the uncertainty in judging of the situation. The report says it was difficult to distinguish between friend and foe. At 8.14 p. m. the battleship squadrons turned east into the line between the 1st and 2nd Battle-Cruiser Squadrons and the 5th Battle Squadron. At 8.17 p. m. the 1st Battle Squadron opened fire on the leaders of our ships of the line. Up to 10.20 p. m. those squadrons, with some few pauses, took part in the fighting.

"Shortly before the battleship squadrons arrived, the 1st Cruiser Squadron, together with light forces from the Main Fleet, joined in the fighting. At 8.50 p. m., therefore, between our first and second blows, Admiral Beatty put the 3rd Battle-Cruiser Squadron in the rear of the 2nd. At 9.6 p. m. the leaders of the battleships made for the south. The total impression received by us of the battle is made more complete by the statements in the English Press, and is not altered.

3

The Enemy's Action During the Night

"At 9.45 p. m. Admiral Beatty had lost sight of our forces. He sent the 1st and 3rd Light Cruiser Squadrons to reconnoitre in the west, and at 10.20 p. m. went to their support with the 1st and 2nd Battle-Cruiser Squadrons, also on a westerly course. Immediately after came the encounter described in my report with the leading ships of our Main Fleet, consisting of Scouting Divisions IV and I and Squadron II. The fact that our forces turned westward must have led the English Admiral to assume that our Main Fleet had taken a westerly course, and made him follow in that direction. The fact that we at the same time put Squadron II in the rear, and with the new leader, Squadron I, again took a S.E. course, resulted in Admiral Beatty's forces passing west in front of us and ultimately losing contact. It was obvious that after the battle the English Main Fleet was divided into two. Admiral Jellicoe's report makes no mention of this. The one portion, consisting of large battleships and light craft, took apparently northerly and easterly courses, as one group of ships was sighted by 'L24' at 5 a. m. on June 1 in Jammer Bay, close under land. It may perhaps have been both those rear squadrons which made off on the attack by our Torpedo-Boat Flotillas VI and IX, and then apparently lost touch with the Main Fleet." The other portion, under Admiral Jellicoe, consisting according to observations by 'L11,' of eighteen large battleships, three battle-cruisers (probably the 3rd Battle-Cruiser Squadron) and numerous light forces, had, up to 10.46 p. m., been steering south and then south-west. It would appear, from intercepted English wireless messages, that he covered 15 nautical miles. Based on these courses and the speed, he must have crossed our course at midnight, 10 to 15 nautical miles in front of us, and have taken later a course to the centre of the line Horns Reef—Terschelling, where he was seen at 5 a. m. by 'L11' on a N.N.E. course.

4

The Consequence of the Enemy's Action during the Night

"Admiral Jellicoe must have intended to resume the battle with us at dawn. It is inexplicable, therefore, why a portion of the Main Fleet made for Jammer Bay during the night. Nor can it be understood how it was that the enemy's light forces, which were engaged with our Main Fleet up to 4.36 a. m. and thus were in touch with us the whole night, could find a way to inform Admiral Jellicoe and Admiral Beatty of our course and navigation. But even apart from that, it must be assumed that the fire from our guns and the enemy's burning cruisers and destroyers would have pointed out the way to the English Main Fleet. In any case it is a fact that on the morning of June 1 the enemy's heavy forces were broken up into three detachments; one in the North, a second with Admiral Beatty in the North-west, and the third with Admiral Jellicoe South-west of Horns Reef. It is obvious that this scattering of the forces—which can only be explained by the fact that after the day-battle Admiral Jellicoe had lost the general command—induced the Commander to avoid a fresh battle."

*According to Admiral Jellicoe's book, one group of battleships did not rejoin him till 6 p. m. on June 1.

V
THE BATTLE OF JUTLAND
Account by Admiral Jellicoe

On May 31st, 1916, the Grand Fleet and the High Sea Fleet fought the action which has become known as the Battle of Jutland. The despatch describing the battle, as published some weeks later, was not quite in its original form as written by me. After a conference held at the Admiralty, early in June, modifications were made; some of them because it was considered that certain passages might convey useful information to the enemy, and other because it was thought to be undersirable to draw attention to certain features of British design. Amongst the latter was the insufficiency of the armour protection of our earlier battle cruisers.

Throughout the War it had been our policy to cause our battle cruisers, with their attendant light cruisers, to occupy when at sea an advanced position, often at a considerable distance from the Battle Fleet. Battle cruisers were designed and built in order that they might keep in touch with the enemy and report his movements when he had been found; hence the heavy guns which they carried. They were intended to find the enemy for the Battle Fleet and to ascertain the enemy's strength in order to report to the Battle Fleet. Had this policy not been adopted the enemy's battle cruisers could not have been brought to action on such occasions as the engagement of January 24th, 1915. And in the cases of raids on our coast, the battle cruisers were always sent ahead at full speed to endeavor to cut off the enemy battle cruisers.

Bearing in mind our superiority in numbers in the middle of 1916 and the heavier armaments carried by our ships, the real risk involved in this policy was that of our battle cruisers being drawn on to the enemy's Battle Fleet, and one or more of our vessels being disabled. Provided that our ships were not disabled, they would, owing to their higher speed, have no difficulty in clear weather in keeping out of range of the enemy's Battle Fleet, if it were sighted, whilst still maintaining touch with it, and driving off lighter vessels. With the added support of the ships of the 5th Battle Squadron, which had been grouped with the Battle Cruiser Fleet owing to the absence of the 3rd Battle Squadron at Scapa Flow, the tactical advantage of our ships was even stronger, provided always that the 5th Battle Squadron had an excess of speed over the fastest enemy's Battle Squadron.

In these circumstances, when preparing my despatch, I had felt it necessary on the highest grounds, as well as only just to the officers and men of our battle cruisers, to give some explanation of the heavy losses incurred by our ships in the early part of the action, when we were opposing six battle cruisers (supported, though at long range by four battleships of the "Queen Elizabeth" class, comprising the 5th Battle Squadron) to five enemy battle cruisers, which were not then supported by the German Battle Fleet. Inquiry into this matter showed that one explanation was that our ships were very inadequately protected by armour as compared with the German vessels of the battle cruiser type. It

was considered undesirable to draw attention to this publicly while the War was in progress.

The relative values of protection and gun power had frequently engaged my serious attention. It was also a subject of much discussion amongst writers on naval matters, some of whom went to the length of suggesting that all available weight should be put into gun power and that ships should be left practically without armour. Their views were based on the argument that "the best defence is a powerful offensive." Although this argument is very true when applied to strategy, the War has shown it fallacy as applied to materiel. The loss of the *Good Hope*, *Monmouth*, *Queen Mary*, *Indefatigable*, *Invincible*, *Defence*, and *Warrior*, and the considerations to which these losses gave rise, convinced naval officers afloat, even if it did not convince others less intimately associated with the Fleet during the War, that ships with inadequate defensive qualities are no match for those which possess them to a considerably greater degree, even if the former are superior in gun power. The conviction was strengthened by the knowledge we obtained, that German ships, far more frequently hit by gunfire, torpedo, or mine than many of our ships that sank, were yet taken safely into port owing partly to their defensive qualities, but partly to the limitations of our armour-piercing shell at that time.

There has been in the past a tendency in some quarters, when comparing the relative strength of the British and German Fleets for the purpose of future provision of large vessels in the Navy Estimates, to make comparison only on the basis of the gun power of the vessels of the two Navies. Great superiority in fighting qualities on the part of the British Fleet was suggested by this blindness to other considerations. During my pre-War service at the Admiralty this question was often under discussion, and I consequently demurred to this line of argument as being very misleading and pointed out that the true comparison lay between the displacement of the ships of the various classes, because if we assumed, as War experience has since shown that we were justified in assuming, that the German naval designers and constructors were not inferior in ability to our own, it was obvious that, taking ships of equal displacement and equal speed, and about contemporary date, if our vessels possessed superiority in gunfire, the Germans must possess superiority in some other direction. It was well known at the Admiralty that their superiority lay in greatly increased protection, combined with heavier torpedo armament.

We were also aware that the German vessels were fitted with small tube boilers, which were very economical in weight for a given horse-power, and, consequently, the German vessels obtained thereby a further advantage, the weight saved being presumably utilised in giving the ships additional protection. In other words, they adopted a different disposition of the weight available in each ship.

The tables (see brown print insert) give particulars of the armament, protection, and displacement of the capital ships of the two Navies engaged in the Battle of Jutland, so far as they are known to me:

The main facts revealed by an examination of these tables are:

TABLE I. BRITISH

SHIPS	Programme	Designed Load displacement	Speed	Fuel capacity	Main and secondary guns	Submerged torpedo tubes
"Royal Sovereign" Class (5)	Year	Tons	Knots	Tons		
	1913-14	25,750	21.5	3,400	8, 15" 14, 6"	4
"Queen Elizabeth" Class (5)	1912-13	27,500	25.0	3,400	8, 15" 12, 6"	4
"Iron Duke" Class (4)	1911-12	25,000	21.0	4,300	10, 13".5 12, 6"	4
"King George V." Class (3)	1910-11	23,000	21.0	4,000	10, 13".5 12, 4"	2
"Orion" Class (4)	1909-10	22,500	21.0	4,100	10, 13".5 13, 4"	2
<i>Canada</i>	Emergency War Programme	28,000	22.75	3,800	10, 14" 12, 6"	4
<i>Erin</i>		23,000	21.0	2,800	10, 13".5 16, 6"	3
<i>Agincourt</i>		27,500	22.0	3,800	14, 12" 20, 6"	3
"Hercules" Class (3)	1909-10	20,000	21.0	3,700	10, 12" 12, 4"	2
"St. Vincent" Class (2)	1907-8	19,250	21.0	3,700	10, 12" 13, 4"	2
"Bellerophon" Class (3)	1906-7	18,600	21.0	3,500	10, 12" 12, 4"	2
<i>Dreadnought</i>	1905-6	17,900	21.0	4,000	10, 12" 20, 12 pds.	4

TABLE II. BRITISH

SHIPS	Programme	Designed Load displacement	Speed	Fuel capacity	Main and secondary guns	Submerged torpedo tubes
<i>Tiger</i> (1)	Year	Tons	Knots	Tons		
	1911-12	28,500	29.0	6,800	8, 13".5 12, 6"	2
"Lion" Class (3)	1909-10	26,350	28.0	4,600	8, 13".5 15, 4"	2
"New Zealand" Class (3)	—	18,800	26.0	4,000	8, 12" 14, 4"	2
"Inflexible" Class (3)	1905-6	17,250	25.0	3,800	8, 12" 12, 4"	4

BATTLESHIPS

ARMOUR							REMARKS
Main belt	Upper belt	Belt at bow	Belt at stern	Secondary gun battery armour	Turret front plates	Protective decks	
13"	6"	4"	4"	6"	13"	1" to 4"	Side armoured up to upper deck and secondary battery above that.
13"	6"	4"	4"	6"	13"	1" to 3"	Ditto
12"	9" and 8"	4"	4"	6"	11"	1½" to 2½"	Ditto
12"	9" and 8"	4"	2½"	nil	11"	1½" to 4"	Side armoured up to upper deck.
12"	9" and 8"	4"	2½"	nil	11"	1½" to 1"	Ditto
9"	7" and 4½"	4"	4"	6"	10"	1½" to 4"	Side armoured up to upper deck and secondary battery above that.
12"	9" and 8"	4"	4"	5"	11"	1½" to 3"	Ditto
9"	6"	4"	4"	6"	12"	1" to 1½"	Ditto
11"	8"	2½"	2½"	nil	11"	1½" to 4"	Side armoured up to main deck only.
10"	8"	2"	2"	nil	11"	¾" to 3"	Ditto
10"	8"	6"	5"	nil	11"	¾" to 3"	Ditto
11"	8"	6"	4"	nil	11"	¾" to 3"	Ditto

BATTLE CRUISERS

ARMOUR							REMARKS.
Main belt	Upper belt	Belt at bow	Belt at stern	Secondary gun battery armour	Turret front plates	Protective decks	
9"	6"	4"	4"	6"	9"	1" to 3"	Side armoured up to upper deck and secondary battery above that.
9"	6"	4"	4"	nil	9"	1" to 2½"	Side armoured up to upper deck.
6"	—	4"	4"	nil	7"	1" to 2½"	Side armoured up to main deck.
6"	—	4"	nil	nil	7"	¾" to 2½"	Ditto

TABLE III. GERMAN

SHIPS	Programme	Designed Load displacement	Speed	Fuel capacity	Main and secondary guns	Submerged torpedo tubes
	Year	Tons		Tons		
"König" Class (4)	1911-12	25,390	23.0	4,200	10, 12" 14, 5".9	5
"Kaiser" Class (5)	1909-11	24,410	21.0	3,700	10, 12" 14, 5".9	5
"Hilfsland" Class (1)	1908-9	22,440	20.5	3,100	12, 12" 14, 5".9	6
"Nassau" Class (1)	1907-8	18,600	20.0	2,800	12, 11" 12, 5".9	6

TABLE IV. GERMAN

SHIPS	Programme	Designed Load displacement	Speed	Fuel capacity	Main and secondary guns	Submerged torpedo tubes
	Year	Tons		Tons		
"Derfflinger" Class*	1911-12	26,180	28.0	5,600	8, 12" 14, 5".9	4
<i>Seydlitz</i>	1910-11	24,610	26.75	3,700	10, 11" 12, 5".9	4
<i>Moltke</i>	1908-9	22,640	27.25	3,200	10, 11" 12, 5".9	4
<i>Von der Tann</i>	1907-8	19,100	26.0	2,900	8, 11" 10, 5".9	4

* *Lutzow* was similar.

TABLE V. Comparison of weight of armour
N.B.—*The German*

		Displacement	Weight of armour
		Tons	Tons
BATTLESHIPS—			
<i>Monarch</i>	British	22,500	4,560
<i>Kaiser</i>	German	24,410	5,430
BATTLE CRUISERS—			
<i>Queen Mary</i>	British	27,000	3,900
<i>Seydlitz</i>	German	24,610	5,200

Note.—Similar comparisons between other ships

BATTLESHIPS

ARMOUR							REMARKS
Main belt	Upper belt	Belt at bow	Belt at stern	Secondary gun battery armour	Turret front plate	Protective decks	
14"	10"	6"	6"	8"	14"	2½" to 3"	Side armoured up to upper deck and secondary battery above that.
13".75	9"	7½"	7½"	7½"	11½"	1½" to 1"	Ditto, but at after end side only armoured up to main deck.
11".75	7½"	7½"	7½"	7½"	11½"	1½" to 2"	Side armoured up to main deck and secondary battery above that.
11".75	7½"	6"	4"	6½"	11"	2" to 1½"	Ditto

BATTLE CRUISERS

ARMOUR							REMARKS
Main belt	Upper belt	Belt at bow	Belt at stern	Secondary gun battery armour	Turret front plates	Protective decks	
12"	8"	5"	5"	7"	11"	1" to 3.2"	Side armoured up to upper deck with secondary battery above that.
11½"	8"	4"	4"	6"	10"	1" to 3½"	Ditto
11"	} tapering	4"	4"	5"	10"	? same as Seydlitz	Ditto
9½"		4"	4"	5"	9"	? same as Seydlitz	Side armoured up to main deck with secondary battery armoured to upper deck.

in British and German ships of the same date, figures are approximate.

Weight of deck protection	TOTAL	Length of ship	Beam
Tons	Tons	Feet	Feet
2,010	6,570	545	88½
3,130	8,560	564	95
2,300	6,200	660	89
2,400	7,600	656	93½

of the same date would show similar results.

BATTLESHIPS

1. The German ships of any particular period were of considerably greater displacement as compared with contemporary British ships.

2. The German ships carried a much greater weight of armour than their British contemporaries.

3. All German Dreadnaughts were provided with side armour to the upper deck, whilst nine of the earliest British Dreadnaughts were provided with armour protection to the main deck only, thus rendering them far more open to artillery attack. The "Orion" class of battleship and the "Lion" class of battle cruiser, designed during my service at the Admiralty as Controller, were the first of our Dreadnaughts armoured to the upper deck.

4. The main belt and upper belt armour of the German ships was in nearly all cases thicker than in their British contemporaries, whilst the protection at the bow and stern was in all cases considerably greater in the German ships.

5. The deck protection in the German ships was usually greater than in the British vessels and the watertight subdivision more complete.

6. The German ships carried a greater number of submerged torpedo tubes than the British vessels.

BATTLE CRUISERS

1. The earlier German battle cruisers were of greater displacement than their British contemporaries.

2. The German ships carried a greater weight of armour than their British contemporaries.

3. Five out of our nine battle cruisers were without protection above the main deck, the whole of the German vessels being provided with protection to the upper deck.

4. The German vessels possessed thicker armour in all positions, including deck protection, as well as more complete watertight subdivision.

5. The German ships carried a greater number of submerged torpedo tubes than the British ships.

As against the additional protection of the German ships our vessels of contemporary design were provided in all cases with heavier turret guns, whilst the German ships carried heavier secondary armaments.

A point of considerable interest, which should also be mentioned because it was to prove important, was that the Germans possessed a delay-action fuse which, combined with a highly efficient armour-piercing projectile, ensured the burst of shell taking place inside the armour of British ships instead of outside, or whilst passing through the armour, which was the case with British shells of that date fired against the thick German armour.

The fuel capacity of the ships of the two Navies was not widely different, although the British ships, as a rule, were fitted to carry more fuel. Although I arranged, after the first few months of war, to reduce the amount of fuel carried by our ships

very considerably—in fact, by more than 25 per cent.—I was unable to reduce it further in coal-burning ships without sacrificing some of the protection afforded by the coal, since in our case it was necessary to be prepared to do a considerable amount of steaming at high speed, involving expenditure of coal, before obtaining contact with the enemy. It would have been unwise to contemplate meeting the Germans with coal below what I may call the “safety line.” On the other hand, it was well known, that, as the Germans had no intention of fighting in action far from their bases, they had effected a very much greater reduction in the quantity of fuel carried, with consequently a corresponding advantage in speed.

There was yet one other matter of great importance, namely, the vulnerability of the ships of the two Navies in regard to under-water attack. Here the Germans possessed a very real advantage, which stood them in good stead throughout the war. It arose from two causes:

1. The greater extent of the protective armour inside the ships, and in many cases its greater thickness.
2. The greater distance of this armour from the outer skin of the ship and the consequent additional protection to under-water attack afforded thereby.

In regard to the first point, the great majority of our ships only carried partial internal protection, that is, protection over a portion of the length of the ship. The protection was usually confined to the region of the magazine and shell-rooms. In the German ships it ran throughout the length of the vessel.

As to the second point it was possible to place the protective bulkhead farther “inboard” in the German ships without cramping machinery and magazine spaces, because the ships themselves were of much greater beam. Consequently the explosion of a mine or a torpedo against the hull of the ship was far less likely to injure the protective bulkhead and so to admit water into the vitals of the ship than was the case with a British vessel. The result was that, although it is known that many German capital ships were mined and torpedoed during the war, including several at the Jutland battle, the Germans have not so far admitted that any were sunk, except the pre-Dreadnought battleship Pommern and the battle cruiser Lutzow, whose inquiries from shell fire were also very extensive.

On the other hand, British capital ships mined or torpedoed rarely survived. The recorded instances of escape are the *Inflexible* (mined in the Dardanelles) and the *Marlborough* (torpedoed at Jutland), and the in latter case, although the torpedo struck at about the most favourable spot for the ship, she had some difficulty in reaching port.

The question will be asked why it was that British ships were under this disadvantage. The reply is that the whole of our Dreadnoughts battleships designed before the War were hampered by the absence of proper dock accommodation. The German Emperor once remarked to me at Kiel on this subject, that we had made the mistake of building our ships before we had proper dock accommodation for them, whilst in Germany they had provided the dock accommodation first and had designed the ships consequently. He was quite right, although, since docks took a long time to construct, the German policy involved delay

in shipbuilding, whereas we got ships of a type, and hence our margin of superiority in 1914. As each successive type of Dreadnought was designed, our constructive staff were faced with the fact that if they went beyond a certain beam the number of docks available would be insufficient; and to obtain money with which to construct adequate docks was always a matter of difficulty. Docks make no appeal to the imagination of the public and a cost a great deal of money. The result was that August, 1914, found us with superiority in ships, but woefully lacking in dock accommodation; and for this reason alone a Fleet action early in the War, resulting in considerable damage to heavy ships, would have produced embarrassing results.

It is only just to our very able constructive staff at the Admiralty to point this out; it was one of the reasons which led to the German ships being much better equipped to withstand under-water attack than were our own. It is devoutly to be hoped that this lesson will be borne in mind in the future, and adequate dock accommodation provided for the Fleet.

The matter is one of which I have considerable personal knowledge, since it came within my province as Controller in 1909-11 and was also given to me to examine whilst Second Sea Lord in 1913. It is needless to say that on both occasions the necessities were pointed out with emphasis. These remarks are not out of place, as will be shown, as an introduction to a consideration of the Battle of Jutland, if that action is to be rightly judged.

In following the proceedings of the Fleet it is essential to bear in mind that the time of receipt of signals, especially of reports emanating from the bridge of a ship, is not a true indication of the time at which the officer making the report began his task. A varying but considerable interval is bound to elapse; this includes the time taken to write out the report, transmit it to the wireless office or signal bridge, code it, signal it, decode it on board the receiving ship, write it out and transmit it to the bridge. The interval is greater with wireless than with visual signals.

1.—THE BATTLE CRUISER FLEET'S ACTION

The Grand Fleet put to sea on May 30th for the purpose of carrying out one of its periodical sweeps in the North Sea. The orders from me under which the Fleet acted were as follows:

Vice-Admiral Sir Martyn Jerram, with the 2nd Battle Squadron from Cromarty, was directed to pass through a position in Lat. 58.15 N., Long. 2.0 E., and to meet the remainder of the Battle Fleet at 2 p. m. on the 31st at position (A) in Lat. 57.45 N., Long. 4.15 E.

Vice-Admiral Sir David Beatty, with the Battle Cruiser Fleet and the 5th Battle Squadron, was directed to proceed to a position in Lat. 56.40 N., Long. 5.40, economising fuel in the destroyers as much as possible; it was expected that he would be in that position by about 2 p. m., on the 31st, after which he was directed to stand to the northward to get into visual touch with the Battle Fleet.

The Iron Duke and the 1st and 4th Battle Squadrons, together with the 3rd Battle Cruiser Squadron, and the newly commis-

sioned light cruisers *Chester* and *Canterbury*, which had been carrying out gunnery and torpedo practices at Scapa, left that base during the evening of May 30th, and proceeded towards position (A), Lat. 57.45 N., Long. 4.15 E., having met the 2nd Battle Squadron en route at 11.15 a. m. in Lat. 58.13 N., Long. 2.42 E. Sir David Beatty had been informed before sailing that the Battle Fleet would steer towards the Horn Reef from the position in Lat. 57.45 N., Long. 4.15 E.

At 2 p. m. on May 31st the Battle Fleet was about 18 miles to the north-westward of the position being actually in Lat. 57.57 N., Long. 3.45 E., in organisation No. 5. The Fleet had been slightly delayed to enable the usual and necessary practice of examining trawlers and other vessels met with en route to be carried out without causing the examining vessels to expend unnecessary fuel in regaining station. We had to be on our guard against disguised enemy scouts. The divisions were in line ahead disposed abeam to starboard in the order: 1st-6th Divisions (screened by the 4th, 11th, and 12th Flotillas) with the 4th Light Cruiser Squadron, three miles ahead of the Battle Fleet. The cruisers, with one destroyer to each cruiser, were stationed 16 miles ahead of the Battle Fleet, spread six miles apart on a line of direction N. 40 E. and S. 40 W.; the cruisers being eight miles apart and their positions being in the order from east to west:

Cochrane Shannon Minotaur (F.) Defence (F.) Duke of Edinburgh Black Prince
Warrior
Hampshire (linking ship 6 miles astern of the Minotaur)

The attached cruisers, the *Active*, *Boadicea*, *Blanche*, and *Bellona*, were on the flanks of the Battle Fleet, and the 3rd Battle Cruiser Squadron, with the light cruisers *Chester* and *Canterbury*, about 20 miles ahead, the whole steering S. 50 E., and zigzagging, the speed of advance being 14 knots.

The disposition of the Battle Fleet is shown below:

Line of Advance.

1st Div.; King George V. (F.), Ajax, Centurion, Erin.
2nd Div.; Orion (F.), Monarch, Conqueror, Thunderer.
3rd Div.; Iron Duke (F.F.), Royal Oak, Superb (F.), Canada.
4th Div.; Benbow (F.), Bellerophon, Temeraire, Vanguard.
5th Div.; Colossus (F.), Collingwood, Neptune, St. Vincent.
6th Div.; Marlborough (F.) Revenge, Hercules, Agincourt.
F., Flagship; F.F., Fleet-Flagship.

It may be added in further explanation that the flagships of the Battle Fleet were:

Iron Duke, Fleet-Flagship.—Flag of Admiral Sir John Jellicoe (Commander-in-Chief).

King George V.—Flagship of Vice-Admiral Sir M. Jerram, Commanding 2nd Battle Squadron.

Orion.—Flagship of Rear-Admiral A. C. Leveson, Rear-Admiral in the 2nd Battle Squadron.

Superb.—Flagship of Rear-Admiral A. L. Duff, Rear-Admiral in the 4th Battle Squadron.

Benbow.—Flagship of Vice Admiral Sir Doveton Sturdee, Commanding the 4th Battle Squadron.

Colossus.—Flagship of Rear-Admiral E. F. A. Gaunt, Rear-Admiral in the 1st Battle Squadron.

Marlborough.—Flagship of Vice-Admiral Sir Cecil Burney, Commanding 1st Battle Squadron and second in command of the Grand Fleet.

The Battle Cruiser Fleet and 5th Battle Squadron, with destroyers, were at 2 p. m. in Lat. 56.46 N., Long. 4.40 E., and had turned to the northward, steering N. by E., speed 19½ knots, in the order:

The Lion and 1st Battle Cruiser Squadron in single line ahead, screened by the light cruiser Champion and 10 destroyers of the 13th Flotilla, with the 2nd Battle Cruiser Squadron in single line ahead three miles E.N.E. of the Lion, screened by six destroyers.* The 5th Battle Squadron, in single line ahead, was five miles N.N.W. of the Lion, being screened by the light cruiser Fearless and nine destroyers of the 1st Flotilla. The Light Cruiser Squadrons formed a screen eight miles S.S.E. from the Lion, ships spread on a line of direction E.N.E. and W.S.W., five miles apart in the order from west to east:

2nd Light Cruiser Squadron; Southampton (F.), Nottingham, Birmingham, Dublin.

3rd Light Cruiser Squadron; Falmouth (F.), Birkenhead, Gloucester.

1st Light Cruiser Squadron; Inconstant, Galatea (F.), Cordelia, Phaeton.

It should be added that the flagships were:

Lion.—Battle Cruiser Fleet-Flagship of Vice Admiral Sir David Beatty.

Princess Royal.—Flagship of Rear-Admiral O. de Brock, commanding 1st Battle Cruiser Squadron.

New Zealand.—Flagship of Rear-Admiral W. Pakenham, commanding 2nd Battle Cruiser Squadron.

Barham.—Flagship of Rear-Admiral H. Evan-Thomas, commanding 5th Battle Squadron.

The Engadine, a sea-plane carrier, was stationed between the light cruisers Gloucester and Cordelia, and the light cruiser Yarmouth acted as linking ship between the Lion and the light cruiser screen.

The first report of enemy vessels was received from the Galatea, the flagship of Commodore E. S. Alexander-Sinclair, commanding the 1st Light Cruiser Squadron, who, at 2.20 p. m., sighted two enemy vessels to the E.S.E. apparently stopped and engaged in boarding a neutral steamer. Sir David Beatty, recognising the possibilities of the situation, immediately turned his fleet to the S.S.E., the course for the Horn Reef, so as to get between the enemy and his base.

At 2.35 p. m. the Galatea reported a large amount of smoke "as from a fleet" bearing E.N.E., followed by a report that the vessels were steering north. The course of the Battle Cruiser Fleet was then altered to the eastward and N.E. towards the smoke, the enemy being sighted at 3.31 p. m. and identified as five battle cruisers accompanied by destroyers.

Meanwhile the 1st and 3rd Light Cruiser Squadrons changed their direction, and, judging the situation accurately, spread to the east without waiting for orders, forming a screen in advance of the heavy ships. Our Light Cruisers sighted and engaged enemy vessels of a similar class at long range. The 2nd Light Cruiser Squadron, under Commodore W. E. Goodenough, with his broad pendant in the Southampton, came in at high speed towards the battle cruisers and formed ahead of them on an E.S.E. course, and at 3.30 p. m. sighted enemy battle cruisers bearing E.N.E.

*These destroyers belonged to the Harwich force, but happened to be at Rosyth.

On receipt of the Galatea's report, Sir David Beatty ordered the Engadine to send up a sea-plane to scout to the N.N.E. This was the first time that sea-planes had been used for reconnaissance work with a fleet in an action, and the event is notable for that reason. The low-lying clouds made observation difficult, but the seaplane, with Flight-Lieutenant F. S. Rutland R.N., as pilot, and Assistant Paymaster G. S. Trewin, R. N., as observer, was able by flying low under the clouds, to identify and report four enemy light cruisers, the report being received on board the Lion at 3.30 p. m. The sea-plane was under heavy fire from the light cruisers during the observation. By this time the line of battle was being formed, the 2nd Battle Cruiser Squadron, forming astern of the 1st Battle Cruiser Squadron with the destroyers of the 9th and 13th Flotillas taking station ahead. The course was E.S.E., slightly converging on the enemy, the speed 25 knots, and the range 23,000 yards. Sir David Beatty formed his ships on a line of bearing in order to clear the smoke.

The 5th Battle Squadron, which had conformed to the movements of the Battle Cruiser Fleet, was now bearing N.N.W., distant 10,000 yards; the weather was favourable, the sun being behind our ships, the wind S.E., and the visibility good.

Meanwhile the wireless reports from the Galatea to the Lion had been intercepted on board the Iron Duke, and directions were at once given to the Battle Fleet to raise steam for full speed, the ships being at the time at short notice for full speed. The cruisers had been ordered to raise steam for full speed earlier. At 3.10 p. m. the Battle Fleet was ordered to prepare for action, and at 3.30 p. m. I directed Flag Officers of Divisions to inform their ships of the situation. The earliest reports from the Galatea had indicated the presence of light cruisers and destroyers only, and my first impression was that these vessels, on sighting the British force, would endeavour to escape via the Skagerrak, as they were to the eastward of our vessels and were consequently not in so much danger of being cut off as if they turned to the southward. The 3rd Battle Cruiser Squadron, which was well placed for cutting the enemy off, had the anticipated move taken place, was ordered to frustrate any such intention; but at 4 p. m., on the receipt of the information of the presence of enemy battle cruisers, it was directed to reinforce Sir David Beatty. About 3.40 p. m. I received a report from Sir David Beatty that he had sighted five battle cruisers and a number of destroyers, and he also gave his position.

As soon as the presence of hostile battle cruisers was reported, course was altered in the Battle Fleet to close our battle cruisers, and speed increased as rapidly as possible. By 4 p. m. the "Fleet speed" was 20 knots, being higher than had previously been obtained. Zigzagging was abandoned on receipt of the Galatea's first report. The battleships were also directed to keep clear of the wake of the next ahead in order to prevent loss of speed from the wash.

At 3.48 p. m. the action between the battle cruisers began at a range of about 18,500 yards, fire being opened by the two forces practically simultaneously. At the commencement the fire from the German vessels was rapid and accurate, the Lion being hit twice three minutes after fire was opened, and the Lion, Tiger, and Princess Royal all receiving several hits by 4 p. m.; observers on board our own ships were of opinion that our fire was also effective at that stage.

At about 4 p. m. it was evident by the accuracy of the enemy's fire that he had obtained the range of our ships, which was then about 16,000 yards. The enemy bore well abaft the beam, and course was altered slightly to the southward to confuse his fire control. Course was altered two or three times subsequently for the same purpose. The German ships frequently zigzagged for the purpose of confusing our fire control.

At this period the fire of the enemy's ships was very rapid and accurate; the *Lion* received several hits, the roof of one of her turrets being blown off at 4 p. m. At about 4.6 p. m. the *Indefatigable* was hit, approximately at the outer edge of the upper deck level in line with the after turret, by several projectiles of one salvo; an explosion followed (evidently that of a magazine) and the ship fell out of the line, sinking by the stern. She was again hit by another salvo forward, turned over and sank.

About this time (4.8 p. m.) the 5th Battle Squadron came into action, opening fire at a range between 19,000 and 20,000 yards. This slower squadron was some distance astern of the battle cruisers and, by reason partly of the smoke of the ships ahead of the enemy vessels and partly of the light to the eastward having become less favourable, difficulty was experienced in seeing the targets, not more than two ships being visible at a time. At 4.12 p. m. the range of the enemy's battle cruisers from our own was about 23,000 yards, and course was altered from S.S.E. to S.E. to close the enemy. Fire had slackened owing to the increase in range.

The tracks of torpedoes were now reported as crossing the line of our battle cruisers, and reports of sighting the periscopes of enemy submarines were also made by more than one ship.

In accordance with the general directions given by Sir David Beatty to the destroyers to attack when a favourable opportunity occurred, the *Nestor*, *Nomad*, *Nicator*, *Narborough*, *Pelican*, *Petard*, *Obdurate*, *Nerissa*, *Moorsom*, *Morris*, *Turbulent* and *Terma-gant* moved out at 4.15 p. m.; at the same time a similar movement took place on the part of an enemy force of one light cruiser and 15 destroyers. Both sides first steered to reach an advantageous position at the van of the opposing battle cruiser lines from which to deliver their attacks, and then turned to the northward to attack. A fierce engagement at close quarters between the light forces resulted, and the enemy lost two destroyers, sunk by our vessels, and, in addition, his torpedo attack was partially frustrated; some torpedoes were fired by the enemy, two of which crossed the track of the 5th Battle Squadron, which had been turned away to avoid the attack.

During this action, which reflected the greatest credit on our destroyers, several of our attacking vessels, owing to their having dropped back towards the rear of our line, were not in a good position to attack the enemy's battle cruisers with torpedoes. The *Nestor*, *Nomad*, and *Nicator*, most gallantly led by Commander the Hon. E. B. S. Bingham in the *Nestor*, were able to press home their attack, causing the enemy's battle cruisers to turn away to avoid their torpedoes. The *Nomad* was damaged and forced to haul out of line before getting within torpedo range of the battle cruisers, but the *Nestor* and *Nicator* succeeded in firing torpedoes at the battle cruisers under a heavy fire from the German secondary armaments. The *Nestor* was then hit, badly damaged by the fire of a light cruiser, and remained stopped be-

tween the lines. She was sunk later by the German Battle Fleet when that force appeared on the scene, but not before she had fired her last torpedo at the approaching ships. The *Nomad* was also sunk by the German Battle Fleet as it came up, but this vessel also fired her torpedoes at the fleet as it approached. In both these destroyers the utmost gallantry in most trying circumstances was shown by the officers and men. It is gratifying to record that a considerable proportion of the ships' companies of these destroyers was picked up by German destroyers as the German Battle Fleet passed the scene. After completing her attack upon the battle cruisers, the *Nicator* was able to rejoin her flotilla. The *Moorsom* also attacked the enemy's Battle Fleet and returned. In the meantime, the *Petard*, *Nerissa*, *Turbulent* and *Termagant* succeeded in firing torpedoes at long range (7,000 yards) at the enemy's battle cruisers. For his gallantry on the occasion of this destroyer attack Commander the Hon. E. B. S. Bingham, who was rescued from the *Nestor* and taken prisoner by the Germans, received the Victoria Cross.

Meanwhile the engagement between the heavy ships had become very fierce, and the effect on the enemy battle cruisers began to be noticeable, the third ship in the line being observed to be on fire at 4.18 p. m., whilst our ships of the 5th Battle Squadron were also inflicting and receiving some punishment. The accuracy and rapidity of the fire from the enemy's vessels was deteriorating at this period; our own ships were much handicapped by the decreasing visibility, due partly to the use by the enemy of smoke screens, under cover of which he altered course to throw out our fire.

The flagship *Barham*, of the 5th Battle Squadron, received her first hit at 4.23 p. m.

At about 4.26 p. m. a second disaster befell the British battle cruisers. A salvo fired from one of the enemy's battle cruisers hit the *Queen Mary* abreast of "Q" turret and a terrific explosion resulted, evidently caused by a magazine blowing up. The *Tiger*, which was following close astern of the *Queen Mary*, passed through the dense cloud of smoke caused by the explosion, and a great deal of material fell on her decks, but otherwise the *Queen Mary* had completely vanished. A few survivors from this ship and from the *Indefatigable* were afterwards rescued by our destroyers. The loss of these two fine ships with their splendid ships' companies was a heavy blow to the Battle Cruiser Fleet, the instantaneous nature of the disaster adding to its magnitude.*

At 4.38 p. m. Commodore Goodenough, in the *Southampton*, Flagship of the 2nd Light Cruiser Squadron, which had been scouting ahead of the battle cruisers, reported that the enemy's Battle Fleet was in sight bearing S. E., and steering to the northward, and gave its position. Sir David Beatty recalled his destroyers, and on sighting the Battle Fleet at 4.42 p. m. turned the battle cruisers 16 points in succession to starboard. This movement was followed by the enemy's battle cruisers, and Sir David Beatty directed Rear-Admiral Evan-Thomas to turn his ships in succession 16 points to starboard. Commodore Goodenough led the 2nd Light Cruiser Squadron to a favourable position from which to observe the movements of the enemy's Battle Fleet, with-

* I was not aware of the loss of the *Queen Mary* and *Indefatigable* until the morning of June 1st.

in 13,000 yards range of the heavy ships, and, in spite of a very heavy fire, clung tenaciously to these ships and forwarded several reports of their position and movements; the skilful manner in which the Commodore, aided by his captains, handled the squadron under this fire undoubtedly saved the ships from heavy loss. Owing to the constant maneuvering of the ships of the 2nd Light Cruiser Squadron during the engagement, the position of the Southampton, as obtained by reckoning, was somewhat inaccurate, as was to be expected. This fact detracted from the value of the reports to me, the position of the enemy by latitude and longitude, as reported from time to time to the Iron Duke, being consequently incorrect. The discrepancy added greatly to the difficulty experienced in ascertaining the correct moment at which to deploy the Battle Fleet, the flank on which to deploy, and the direction of deployment. Such discrepancies are, however, inevitable under the conditions.

The necessary move of the battle cruisers to the southward in their pursuit of the enemy, at a speed considerably in excess of that which the Battle Fleet could attain, resulted in opening the distance between the two forces, so that at the time of the turn of Sir David Beatty's force to the northward, the Iron Duke and the Lion were over 50 miles apart, and closing at a rate of about 40 miles per hour.

As soon as the position of the Lion was known after the receipt of the report of the enemy battle cruisers being in sight, Rear-Admiral the Hon. H. S. Hood was directed to proceed immediately to reinforce Sir David Beatty's force, whose position, course and speed was signalled to the Rear-Admiral. The latter officer reported his own position and gave his course and speed as S. S. E., 25 knots. At the same time the Battle Fleet was informed that our battle cruisers were in action with the enemy's battle cruisers, and an inquiry was addressed to Rear-Admiral Evan-Thomas to ascertain whether he was in company with Sir David Beatty, a reply in the affirmative being received, with a report that his squadron was in action.

At this time I was confident that, under the determined leadership of Sir David Beatty, with a force of four of our best and fastest battleships and six battle cruisers, very serious injury would be inflicted on the five battle cruisers of the enemy if they could be kept within range.

The report of the presence of the German Battle Fleet, which was communicated to our Battle Fleet, did not cause me any uneasiness in respect of the safety of our own vessels, since our ships of the 5th Battle Squadron were credited with a speed of 25 knots. I did not, however, expect that they would be able to exceed a speed of 24 knots; the information furnished to me at this time gave the designed speed of the fastest German battleships as 20.5 knots only. Even after making full allowance for the fact that our ships were probably carrying more fuel and stores proportionately than the Germans, and giving the Germans credit for some excess over the designed speed, no doubt existed in my mind that both our battleships and our battle cruisers with Sir David Beatty could keep well out of range of the enemy's Battle Fleet, if necessary, until I was able to reinforce them. I learned later, as an unpleasant surprise, that the 5th Battle Squadron, when going at its utmost speed, found considerable difficulty in increasing its distance from the enemy's 3rd Battle Squadron, consisting of ships

of the "Koenig" class, and on return to Scapa I received a report from the Admiralty which credited this enemy squadron with a speed of 23 knots for a short period, this being the first intimation I had received of such a speed being attainable by them.

To return to Sir David Beatty. The action between the battle cruisers was renewed during the retirement of our ships to the northward, and the two leading ships of the 5th Battle Squadron, the Barham and Valiant, supported our battle cruisers by their fire, whilst the two rear ships of that force, the Warspite and Malaya, engaged the leading ships of the enemy's Battle Fleet as long as their guns would bear, at a range of about 19,000 yards.

The light cruiser Fearless, with destroyers of the 1st Flotilla, was now stationed ahead of the battle cruisers, and the light cruiser Champion, with destroyers of the 13th Flotilla, joined the 5th Battle Squadron. The 1st and 3rd Light Cruiser Squadrons, which had been in the rear during the southerly course, now took up a position on the starboard, or advanced, bow of the battle cruisers, the 2nd Light Cruiser Squadron being on the port quarter. During this northerly run the fire from our ships was very intermittent, owing to the weather thickening to the eastward, although the enemy was able at times to fire with some accuracy.

From 5 p. m. until after 6 p. m. the light was very much in favour of the enemy, being far clearer to the westward than to the eastward. A photograph taken on board the Malaya at 5.15 p. m. towards the western horizon established this clearly. Our destroyers, shown silhouetted against the bright horizon, were at this time at least 16,000 yards distant.

Our battle cruisers ceased fire altogether for about 30 minutes after 5.12 p. m. owing to the enemy's ships being invisible, fire being reopened at about 5.40 p. m. on the enemy's battle cruisers, three or four of which could be seen, although indistinctly, at a distance of some 14,000 yards. Between 5.42 and 5.52 however, our fire seemed to be effective, the Lion alone firing some 15 salvos during this period.

At 5.10 p. m. the destroyer Moresby, which had rejoined the Battle Cruiser Fleet after assisting the Engadine with her sea-plane, fired a torpedo at the enemy's line at a range of between 6,000 and 8,000 yards, from a favourable position—two points before the beam of the enemy's leading battle cruiser.

At 5.35 p. m. the Lion's course was gradually altered from N.N.E. to N.E. in order to conform to the signalled movements and resulting position of the British Battle Fleet. The enemy's battle cruisers also gradually hauled to the eastward, being probably influenced in this movement by reports received from their light cruisers, which were by this time in contact with the light cruiser Chester and in sight of our 3rd Battle Cruiser Squadron led by Rear-Admiral Hood.

The proceedings of these vessels will now be described.

At 4 p. m., in accordance with my directions, the 3rd Battle Cruiser Squadron, under Rear-Admiral Hood, proceeded at full speed to reinforce Sir David Beatty. At 5 p. m. the squadron, comprising the Invincible (Flag), Inflexible, and Indomitable, in single line ahead in that order, with the destroyers Shark, Christopher, Ophelia, and Acasta, disposed ahead as a submarine screen, had the light cruiser Canterbury five miles ahead and the

light cruiser Chester bearing N. 70° W., and was steering S. by E. at 25 knots. The visibility was rapidly decreasing. According to the Indomitable's report, objects could be distinguished at a distinguished at a distance of 16,000 yards on some bearings, and on others at only 2,000 yards, and from then onwards, according to the same report, the visibility varied between 14,000 and 5,000 yards, although other reports place it higher at times.

At 5.30 p. m. the sound of gunfire was plainly heard to the south-westward, and the Chester turned in that direction to investigate and, at 5.36., sighted a three-funnelled light cruiser on the starboard bow with one or two destroyers in company. The Chester challenged and, receiving no reply, altered course to west to close, judging from the appearance of the destroyer that the vessel was hostile.

As the Chester closed, course was altered to about north, in order to avoid being open to torpedo attack by the destroyer on a bearing favourable to the latter. This turn brought the enemy well abaft the port beam of the Chester and on an approximately parallel course. During the turn the Chester sighted two or more light cruisers astern of the first ship, and the leading enemy light cruiser opened fire on the Chester, the latter replying immediately afterwards, at a range of about 6,000 yards. The visibility at this time, judging by the distance at which the enemy's light cruisers were sighted from the Chester, could not have exceeded 8,000 yards. The enemy's fourth salvo hit the Chester, put No. 1 gun port out of action, and killed and wounded a large proportion of the gun crews of Nos. 1, 2, and 3 port guns. The light cruisers sighted by the Chester undoubtedly belonged to one of the enemy's scouting groups stationed on the starboard bow of their battle cruisers.

Captain Lawson of the Chester, in view of the superior force to which he was opposed, altered course to the N.E. and towards the 3rd Battle Cruiser Squadron, bringing the enemy's light cruisers, all of which had opened a rapid and accurate fire, astern of him. The enemy vessels turned after the Chester, and during the unequal engagement, which lasted for 19 minutes, Captain Lawson successfully maneuvered his ship with a view to impeding the accuracy of the hostile fire, realising that she was in no condition to engage such superior forces successfully in her damaged state.

The Chester closed the 3rd Battle Cruiser Squadron and took station N.E. of this squadron, joining the 2nd Cruiser Squadron at a later phase of the action. The ship suffered considerable casualties, having 31 killed and 50 wounded; three guns and her fire control circuits were disabled; she had four shell holes a little distance above the water line. It was on board the Chester that the second Victoria Cross of the action was earned, posthumously, by Jack Cornwell, Boy 1st Class, who was mortally wounded early in the action. This gallant lad, whose age was less than 16½ years, nevertheless remained standing alone at a most exposed post, quietly awaiting orders till the end of the action, with the guns' crew, dead and wounded, all round him.

Meanwhile flashes of gunfire were seen from the 3rd Battle Cruiser Squadron at 5.40 p. m., and Rear-Admiral Hood turned his ships to starboard and brought the enemy light cruisers, which were engaging the Chester, and from which vessels the flashes came, on to his port bow. During this turn the destroyers

attached to the 3rd Battle Cruiser Squadron were brought on to the port quarter of the squadron. As soon as Rear-Admiral Hood made out his position he led his squadron with the *Canterbury* between the enemy and the *Chester*, on a course about W.N.W., and at 5.55 p. m. opened an effective fire on the German light cruisers with his port guns, at a range of about 10,000 to 12,000 yards. The enemy vessels turned away from this attack and fired torpedoes at the battle cruisers; the tracks of five torpedoes were seen later from the *Indomitable*. At about 6.10 p. m. the *Invincible* and *Indomitable* turned to starboard to avoid these torpedoes, three of which passed very close to the latter ship, and ran alongside within 20 yards of the vessel. The *Inflexible* turned to port.

Meanwhile more enemy light cruisers were sighted astern of the first group, and the four British destroyers, *Shark*, *Acasta*, *Ophelia* and *Christopher*, attacked them and the large destroyer force in company with them, and were received by a heavy fire which disabled the *Shark* and damaged the *Acasta*. On board the *Shark* the third V. C. of the action was earned by her gallant captain, Commander Loftus Jones, this award also being, I regret to say, posthumous.

The attack of the British destroyers was carried out with great gallantry and determination, and having frustrated the enemy's torpedo attack on the 3rd Battle Cruiser Squadron, Commander Loftus Jones turned his division to regain his position on our battle cruisers. At this moment three German vessels came into sight out of the mist and opened a heavy fire, further disabling the *Shark* and causing many casualties on board; Commander Loftus Jones was amongst those wounded. Lieut.-Commander J. O. Barron, commanding the *Acasta*, came to the assistance of the *Shark*, but Commander Loftus Jones refused to imperil a second destroyer, and directed the *Acasta* to leave him. The *Shark* then became the target for the German ships and destroyers. Commander Loftus Jones, who was assisting to keep the only undamaged gun in action, ordered the last torpedo to be placed in the tube and fired; but whilst this was being done the torpedo was hit by a shell and exploded, causing many casualties. Those gallant officers and men in the *Shark* who still survived continued to fight the only gun left in action, the greatest heroism being exhibited. The captain was now wounded again, his right leg being taken off by a shell; but he still continued to direct the fire, until the condition of the *Shark* and the approach of German destroyers made it probable that the ship would fall into the hands of the enemy, when he gave orders for her to be sunk, countermanding this order shortly afterwards on realising that her remaining gun could still be fought. A little later, the ship was hit by two torpedoes, and sank with her colours flying. Only six survivors were picked up the next morning by a Danish steamer. In recognition of the great gallantry displayed, the whole of the survivors were awarded the Distinguished Service Medal. Their names are: W. C. R. Griffin, Petty Officer; C. Fil-leul, Stoker Petty Officer; C. C. Hope, A.B.; C. H. Smith, A. B.; T. O. G. Howell, A.B.; T. W. Swan, Stoker.

At this point it is well to turn to the proceedings of our advanced cruiser line, which at 5 p. m. was about 16 miles ahead of the Battle Fleet, the latter being at that time in Lat. 57.24 N., Long. 5.12 E., steering S.E. by S. at 20 knots. It should be noted that,

owing to decreasing visibility, which was stated in reports from the cruisers to be slightly above six miles, the cruisers on the starboard flank had closed in and were about six miles apart by 5.30 p. m. The 3rd Battle Cruiser Squadron was about 16 miles due east of the advanced cruiser line, but was steering more to the southward on a converging course at a speed of about five knots faster.

At 5.40 p. m. firing was heard ahead by the cruiser line, and shortly afterwards ships were seen from the *Minotaur* to be emerging from the mist. Rear-Admiral Heath, the senior officer of the cruiser line, had recalled the ships of the 2nd Cruiser Squadron on hearing the firing and had ordered them to form single line ahead on the *Minotaur*. He then made the signal to engage the enemy, namely, the ships in sight ahead; but before fire was opened they replied to his challenge and were identified as the ships of the 3rd Battle Cruiser Squadron, engaged with the enemy's light cruisers and steering to the westward.

At 5.47 p. m. the *Defence*, with the *Warrior* astern, sighted on a S. by W. bearing (namely on the starboard bow) three or four enemy light cruisers, and course was altered three points to port, bringing them nearly on a beam bearing. Rear-Admiral Sir Robert Arbuthnot, in the *Defence*, then signalled "Commence fire." Each ship fired three salvoes at a three-funnelled cruiser. The salvoes fell short, and the *Defence* altered course to starboard, brought the enemy first ahead, and then to a bearing on the port bow, evidently with the intention of closing. The latter alteration of course was made at 6.1 p. m., and by this time projectiles from the light cruisers were falling in close proximity to the *Defence* and the *Warrior*. These ships opened fire with their port guns at 6.5 p. m. and shortly afterwards passed close across the bows of the *Lion* from port to starboard. One light cruiser, probably the *Wiesbaden*, was hit by the second salvoes of both ships, appeared to be badly crippled, and nearly stopped. Our ships continued to close her until within 5,500 yards. From about 6.10 p. m. onwards they had come under fire of guns of heavy calibre from the enemy's battle cruisers, but Sir Robert Arbuthnot, as gallant and determined an officer as ever lived, was evidently bent on finishing off his opponent, and held on, probably not realising in the gathering smoke and mist that the enemy's heavy ships were at fairly close range. At about 6.16 p. m. the *Defence* was hit by two salvoes in quick succession, which caused her magazines to blow up and the ship disappeared. The loss of so valuable an officer as Sir Robert Arbuthnot and so splendid a ship's company as the officers and men of the *Defence* was a heavy blow. The *Warrior* was very badly damaged by shell fire, her engine-rooms being flooded; but Captain Molteno was able to bring his ship out of action, having first seen the *Defence* disappear. From diagrams made in the *Warrior* it appears that the German battle cruisers turned, 16 points (possibly with a view either to close their Battle Fleet or to come to the aid of the disabled *Wiesbaden*), engaged the *Defence* and *Warrior*, and then turned back again. This supposition is confirmed by sketches taken on board the *Duke of Edinburgh* at the same time. Owing to the smoke and the mist, however, it was difficult to state exactly what occurred. From the observations on board the *Warrior*, it is certain that the visibility was much greater in her direction from the enemy's line than it was in the direction of the enemy from the *Warrior*. Although the *Defence*

and Warrior were being hit frequently, those on board the Warrior could only see the ships firing at them very indistinctly, and it is probable that the low visibility led to Sir Robert Arbuthnot not appreciating that he was at comparatively short range from the German battle cruisers until he was already under an overwhelming fire.

The Warrior passed astern of the 5th Battle Squadron at the period when the steering gear of the Warspite had become temporarily disabled.*

The Duke of Edinburgh, the ship next to the westward of the Defence and the Warrior in the cruiser screen, had turned to close these ships when they became engaged with the enemy's light cruisers in accordance with a signal from the Defence. The Duke of Edinburgh joined in the engagement, but, on sighting the Lion on her starboard bow, did not follow the other ships across the bows of the battle cruisers, as to do so would have seriously incommoded these vessels; she turned to port to a parallel course and eventually joined the 2nd Cruiser Squadron.

The Black Prince was observed from the Duke of Edinburgh to turn some 12 points to port at the same time that the Duke of Edinburgh turned, but her subsequent movements are not clear; the German accounts of the action stated that the Black Prince was sunk by gunfire at the same time as the Defence, but she was not seen to be in action at this time by any of our vessels, and, moreover, a wireless signal, reporting a submarine in sight and timed 8.48 p. m., was subsequently received from her. It is probable that the Black Prince passed to the rear of the Battle Fleet at about 6.30 p. m., and that during the night she found herself close to one of the German battle squadrons, and was sunk then by superior gunfire. In support of this theory, the German account mentions that a cruiser of the "Cressy" type was sunk in that manner during the night. None of the ships of this class was present during the engagement, but the Black Prince might well have been mistaken for a ship of this type in the circumstances.

We left the 3rd Battle Cruiser Squadron at about 6.10 p. m. at the termination of their engagement with enemy light cruisers, turning to avoid torpedoes fired at them. At about this time Rear-Admiral Hood sighted the Lion and the 1st Battle Cruiser Squadron, and at about 6.16 p. m. hoisted the signal to his squadron to form single line ahead, and turned to take station ahead of the Lion and to engage the hostile battle cruisers, which at 6.20 p. m. were sighted at a range of 8,600 yards.

A furious engagement ensued for a few minutes, and the fire of the squadron was judged by those on board the Invincible to be very effective. Rear-Admiral Hood, who was on the bridge of the Invincible with Captain Cay, hailed Commander Dannreuther, the gunnery officer in the fore control, at about 6.30 p. m., saying, "Your firing is very good. Keep at it as quickly as you can; every shot is telling." At about 6.34 p. m. the Invincible which had already been hit more than once by heavy shell without appreciable damage, was struck in "Q" turret. The shell apparently burst inside the turret, as Commander Dannreuther saw the roof blown off. A very heavy explosion followed immediately, evidently caused by the magazine blowing up, and the ship broke in half and sank at once, only two officers, including Com-

*See page 127.

mander Dannreuther, and four men being subsequently picked up by the destroyer Badger. The British Navy sustained a most serious loss in Rear-Admiral the Hon. Horace Hood, one of the most distinguished of our younger flag officers, and in Captain Cay and the officers and men of his flagship. The difficulties of distinguishing enemy ships even at the close range of this engagement is revealed by the fact that the officers in the *Invincible* and *Indomitable* were under the impression that they were engaging battle cruisers, whilst officers in the *Inflexible*, stationed between these two ships in the line, reported that her fire was being directed at a battleship of the "Kaiser" or "Koenig" class, and that only one ship could be seen.

Just before the loss of the *Invincible*, the 3rd Light Cruiser Squadron, commanded by Rear-Admiral Napier, had carried out an effective torpedo attack on the enemy's battle cruisers; both the light cruisers *Falmouth* and *Yarmouth* fired torpedoes at the leading battle cruiser. It was thought that one of the torpedoes hit its mark, as a heavy under-water explosion was felt at this time.

After the loss of the *Invincible*, the *Inflexible* was left as leader of the line, and as soon as the wreck of the *Invincible* had been passed, course was altered two points to starboard to close the enemy ships, which were disappearing in the mist. A further turn to starboard for the same purpose was made, but at this time, 6.50 p. m., the battle cruisers being clear of the leading battleships (which were bearing N.N.W. three miles distant), Sir David Beatty signalled the 3rd Battle Cruiser Squadron to prolong the line of battle cruisers, and the *Inflexible* and *Indomitable* took station astern of the *New Zealand*.

The course of events can now be traced with accuracy. The *Chester* with the 3rd Battle Cruiser Squadron, which by 5.40 p. m. had got ahead of the Battle Fleet's cruiser screen, encountered some of the light cruisers composing the enemy's screen and engaged them, and, in doing so, drew the enemy's light cruisers towards the 3rd Battle Cruiser Squadron, which, with the *Canterbury* and destroyers, turned to about W.N.W. to assist the *Chester* and to engage the enemy vessels.

In the course of this movement a destroyer attack was made by four British destroyers on the enemy's light cruisers. This attack was apparently thought by the Germans to come from the flotillas with the Battle Fleet, as far as can be judged from their report of the action; the ships of the 3rd Battle Cruiser Squadron were undoubtedly mistaken by their vessels for the van of our Battle Fleet, since mention is made in the German report of the British Battle Fleet having been sighted at this time by the German light forces, steering in a westerly or north-westerly direction. The mistaken idea caused the van of the High Sea Fleet to turn off to starboard.

So far from our Battle Fleet being on a westerly course at this time, the fact is that our Battle Fleet held its south-easterly course before, through, and immediately subsequent to deployment, gradually hauling round afterwards, first through south to south-west, and then to west, but it was not until 8 p. m. that a westerly course was being steered.

The only point that is not clear is the identity of the light cruiser engaged and seriously damaged by the 3rd Battle Cruiser Squadron. The ship engaged by the *Defense* and *Warrior* was

apparently the Wiesbaden. It seems to be impossible that the 3rd Battle Cruiser Squadron engaged the same vessel, and it is more likely to have been another light cruiser in the enemy's screen. The two engagements took place at almost the same time, the 3rd Battle Cruiser Squadron opening fire at 5.55 p. m. and the Defence and the Warrior (the 1st Cruiser Squadron) commencing their engagement with the starboard guns at about 5:50 p. m. and continuing it with the port guns at 6.5 p. m. It is hardly possible, even in the conditions of low visibility that prevailed, that the two squadrons could have been engaging the same vessel.

Mention should be made here of the work of the destroyer Onslow, commanded by Lieutenant Commander J. C. Tovey, which at 6:05 p. m. sighted an enemy's light cruiser in a position on the bows of the Lion and favourable for torpedo attack on that ship. The Onslow closed and engaged the light cruiser with gunfire at ranges between 2,000 and 4,000 yards, and then, although severely damaged by shell fire, succeeded in closing a German Battle cruiser to attack with torpedoes; she was struck by a heavy shell before more than one torpedo could be fired. Lieutenant Commander Tovey thought that his order to fire all torpedoes had been carried out, and finding that this was not the case, closed the light cruiser and fired a torpedo at her, and then sighting the Battle Fleet fired the remaining torpedoes at battleships. The Onslow's engines then stopped, but the damaged destroyer Defender, Lieutenant Commander Palmer, closed her at 7:15 p. m. and took her in tow under a heavy fire, and, in spite of bad weather during the night and the damaged condition of both destroyers, brought her back to home waters, transferring her on June 1st to the care of a tug.

II.—THE BATTLE FLEET IN ACTION

The "plot" made on the reports received between 5 and 6 p. m. from Commodore Goodenough, of the 2nd Light Cruiser Squadron, and the report at 4:45 p. m. from Sir David Beatty in the Lion giving the position of the enemy's Battle Fleet, showed that we, of the Battle Fleet, might meet the High Sea Fleet approximately ahead and that the cruiser line ahead of the Battle Fleet would sight the enemy nearly ahead of the centre. Obviously, however, great reliance could not be placed on the positions given by the ships of the Battle Cruiser Fleet, which had been in action for two hours and frequently altering course. I realised this, but when contact actually took place it was found that the positions given were at least twelve miles in error when compared with the Iron Duke's reckoning. The result was that the enemy's Battle Fleet appeared on the starboard bow instead of ahead as I had expected, and contact also took place earlier than was anticipated. There can be no doubt as to the accuracy of the reckoning on board the Iron Duke, as the movements of that ship could be "plotted" with accuracy after leaving Scapa Flow, there being no disturbing elements to deal with.

The first accurate information regarding the position of affairs was contained in a signal from the Black Prince of the 1st Cruiser Squadron (the starboard wing ship of the cruiser screen), which was timed 5:40 p. m., but received by me considerably later, and in which it was reported that battle cruisers were in sight, bearing south, distant five miles. It was assumed by me that these were our own vessels.

Prior to this, in view of the rapid decrease in visibility, I had directed Captain Dreyer, my Flag-Captain, to cause the range finder operators to take ranges of ships on bearings in every direction and to report the direction in which the visibility appeared to be the greatest. My object was to ascertain the most favourable bearing in which to engage the enemy should circumstances admit of a choice being exercised. Captain Dreyer reported that the visibility appeared to be best to the southward.

At 5:45 p. m. the *Comus* (Captain Hotham), of the 4th Light Cruiser Squadron, which was stationed three miles ahead of the Battle Fleet, reported heavy gunfire on a southerly bearing, i. e., three points from ahead, and shortly afterwards flashes of gunfire were visible bearing south-south-west although no ships could be seen.

At about 5:50 p. m. I received a wireless signal from Sir Robert Arbuthnot, of the 1st Cruiser Squadron, reporting having sighted ships in action bearing south-south-west and steering north-east. There was, however, no clue as to the identity of these ships. It was in my mind that they might be the opposing battle cruisers.

At 5:55 p. m. a signal was made by me to Admiral Sir Cecil Burney, leading the starboard wing division in the Marlborough, inquiring what he could see. The reply was: "Gun flashes and heavy gunfire on the starboard bow." This reply was received at about 6:05 p. m.

The uncertainty which still prevailed as to the position of the enemy's Battle Fleet and its formation caused me to continue in the Battle Fleet on the course south-east by south at a speed of 20 knots, in divisions line ahead disposed abeam to starboard, the *Iron Duke* at 6 p. m. being in Lat. 57.11 N., Long. 5.39 E.

The information so far received had not even been sufficient to justify me in altering the bearing of the guides of columns from the *Iron Duke* preparatory to deployment, and they were still, therefore, on the beam. The destroyers also were still disposed ahead in their screening formation, as it was very desirable to decide on the direction of deployment before stationing them for action.

At 5:56 p. m. Admiral Sir Cecil Burney reported strange vessels in sight bearing south-south-west and steering east, and at 6 p. m. he reported them as British battle cruisers three to four miles distant, the *Lion* being the leading ship.

This report was made by searchlight and consequently reached me shortly after 6 p. m., but as showing the interval that elapses between the intention to make a signal and the actual receipt of it (even under conditions where the urgency is apparent, no effort is spared to avoid delay, and the signal staff is efficient), it is to be noted that whereas the report gave the bearing of our vessels as south-south-west, notes taken on board the *Colossus* placed our battle cruisers one point on the starboard bow of that ship, that is, on a south-south-east bearing and distant two miles at 6:05 p. m.

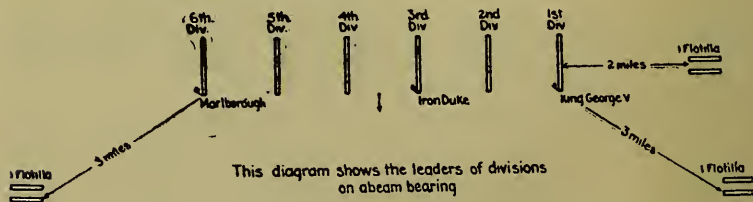
Shortly after 6:00 p. m. we sighted strange vessels bearing south-west from the *Iron Duke* at a distance of about five miles. They were identified as our battle cruisers, steering east across the bows of the Battle Fleet. Owing to the mist it was not possible to make out the number of ships that were following the *Lion*.

At this stage there was still great uncertainty as to the position of the enemy's Battle Fleet; flashes of gunfire were visible from ahead round to the starboard beam, and the noise was heavy and continuous. Our cruisers ahead seemed to be hotly engaged, but the fact that they were not closing the Battle Fleet indicated to me that their opponents could hardly be battleships.

In order to take ground to starboard, with a view to clearing up the situation without altering the formation of the Battle Fleet, a signal had been made to the Battle Fleet at 6:02 p. m. to alter course leaders together, the remainder in succession, to south (a turn of three points). Speed was at the same time reduced to 18 knots to allow of the ships closing up into station. Immediately afterwards it became apparent by the sound of the heavy firing that enemy's heavy ships must be in close proximity, and the *Lion*, which was sighted at this moment signalled at 6:06 p. m. that the enemy's battle cruisers bore south-east. Meanwhile, at about 5:50 p. m., I had received a wireless report from Commodore Goodenough commanding the 2nd Light Cruiser Squadron, to the effect that the enemy's battle cruisers bore south-west from their Battle Fleet; in other words, that his Battle Fleet bore north-east from his battle cruisers.

In view of the report from Sir Cecil Burney that our battle cruisers were steering east, and observing that Sir David Beatty reported at 6:06 p. m. that the enemy's battle cruisers bore south-east, it appeared from Commodore Goodenough's signal that the enemy's Battle Fleet must be ahead of his battle cruisers. On the other hand, it seemed to me almost incredible that the Battle Fleet could have passed the battle cruisers. The conflicting reports added greatly to the perplexity of the situation, and I determined to hold on until matters became clearer.

The conviction was, however, forming in my mind that I should strike the enemy's Battle Fleet on a bearing a little on the starboard bow, and in order to be prepared for deployment I turned the Fleet to a south-east course, leaders together and the remainder in succession, and the destroyer flotillas were directed by signal, at 6:08 p. m., to take up the destroyer position No. 1 for battle. This order disposed them as follows:



There was, however, a very short interval between this signal to the destroyers and the signal for deployment, and consequently the destroyers did not reach their positions before deployment. The subsequent alterations of course to the southward and westward added to their difficulties and delayed them greatly in gaining their stations at the van of the Fleet after deployment. The correct position for the two van flotillas on deployment was three miles ahead of the Fleet, but slightly on the engaged bow.

At 6:01 p. m., immediately on sighting the *Lion*, a signal had

been made to Sir David Beatty inquiring the position of the enemy's Battle Fleet. This signal was repeated at 6:10 p. m., and at 6:14 p. m. he signalled: "Have sighted the enemy's Battle Fleet bearing south-south-west"; this report gave me the first information on which I could take effective action for deployment.

At 6:15 p. m. Rear Admiral Hugh Evan-Thomas, in the Barham, commanding the 5th Battle Squadron signalled by wireless that the enemy's Battle Fleet was in sight, bearing south-south-east. The distance was not reported in either case, but in view of the low visibility, I concluded it could not be more than some five miles. Sir Cecil Burney had already reported the 5th Battle Squadron at 6:07 p. m. as in sight, bearing south-west from the Marlborough.

The first definite information received on board the Fleet Flagship of the position of the enemy's Battle Fleet did not, therefore, come in until 6:14 p. m., and the position given placed it thirty degrees before the starboard beam of the Iron Duke, or fifty-nine degrees before the starboard beam of the Marlborough, and apparently in close proximity. There was no time to lose, as there was evident danger of the starboard wing column of the Battle Fleet being engaged by the whole German Battle Fleet before deployment could effected. So at 6:16 p. m. a signal was made to the Battle Fleet to form line of battle on the port wing column, on a course south-east by east, it being assumed that the course of the enemy was approximately the same as that of our battle cruisers.

Speed was at the same time reduced to 14 knots to admit of our battle cruisers passing ahead of the Battle Fleet, as there was danger of the fire of the Battle Fleet being blanketed by them.

During the short interval, crowded with events, that had elapsed since the first flashes and sound of gunfire had been noted on board the Iron Duke, the question of most urgent importance before me had been the direction and manner of deployment.

As the evidence accumulated that the enemy's Battle Fleet was on our starboard side, but on a bearing well before the beam of the Iron Duke, the point for decision was whether to form line of battle on the starboard or on the port wing column. My first and natural impulse was to form on the starboard wing column in order to bring the Fleet into action at the earliest possible moment, but it became increasingly apparent, both from the sound of gunfire and the reports from the Lion and Barham, that the High Sea Fleet was in such close proximity and on such a bearing to create obvious disadvantages in such a movement. I assumed that the German destroyers would be ahead of their Battle Fleet, and it was clear that, owing to the mist, the operations of destroyers attacking from a commanding position in the van would be much facilitated; it would be suicidal to place the Battle Fleet in a position where it might be open to attack by destroyers during such a deployment.

The further points that occurred to me were, that if the German ships were as close as seemed probable, there was considerable danger of the 1st Battle Squadron, and especially the Marlborough's Division, being severely handled by the concentrated fire of the High Sea Fleet before the remaining divisions could get into line to assist. Included in the 1st Battle Squadron were several of our older ships, with only indifferent protection as compared with the German capital ships, and an interval of at least four

minutes would elapse between each division coming into line astern of the sixth division and a further interval before the guns could be directed on to the ship selected and their fire become effective.

The final disadvantage would be that it appeared, from the supposed position of the High Sea Fleet, that the van of the enemy would have a very considerable "overlap" if line were formed on the starboard wing division, whereas this would not be the case with deployment on the port wing column. The overlap would necessitate a large turn of the starboard wing division to port to prevent the "T" being crossed, and each successive division coming into line would have to make this turn, in addition to the 8-point turn required to form the line. I therefore decided to deploy on the first, the port wing, division.

The further knowledge which I gained of the actual state of affairs after the action confirmed my view that the course adopted was the best in the circumstances.

The reports from the ships of the starboard wing division show that the range of the van of the enemy's Battle Fleet at the moment of deployment was about 13,000 yards. The fleets were converging rapidly, with the High Sea Fleet holding a position of advantage such as would enable it to engage effectively, first the unsupported starboard division, and subsequently succeeding divisions as they formed up astern. It is to be observed that it would take some twenty minutes to complete the formation of the line of battle.

The German gunnery was always good at the start, and their ships invariably found the range of a target with great rapidity, and it would have been very bad tactics to give them such an initial advantage, not only in regard to gunnery but also in respect of torpedo attack, both from ships and from destroyers.

A subsequent study of the reports and the signals received has admitted of the diagrams which will be found on the brown prints appended to the text.

The reports on being reviewed fit in very well, and show clearly how great would have been the objections to forming on the starboard wing divisions. The bearings of the enemy Battle Fleet, as given by the Lion and the Barham at 6.14 and 6.15 respectively, give a fair "cut," and the bearing on which the Marlborough opened fire enables the position of the Battle Fleet to be placed with considerable accuracy.

Assuming that the German Battle Fleet was steaming at 17 knots on an easterly course between 6.14 and 6.31, it would be at the latter time bear approximately some 21 degrees before the starboard beam of the Iron Duke at a range of 12,000 yards. The Iron Duke actually engaged the leading battleship at this time on a bearing 20 degrees before the starboard beam at a range of 12,000 yards. The accuracy of the diagram is therefore confirmed, so far as confirmation is possible. It appears certain that between about 6.0 p. m., and 6.16 p. m. the German battle cruisers turned 16 points towards their Battle Fleet, and again turned 16 points to their original course. This is borne out by observations on board the Warrior, which ship was being engaged by the starboard guns of enemy vessels. The German account also shows such a turn at this period.

Rear-Admiral Evan-Thomas, commanding the 5th Battle Squadron, had sighted the Marlborough at 6.6 p. m. and the remainder of the 6th Division of the Battle Fleet a little later. Not seeing any other columns, he concluded that the Marlborough was leading the whole line, and decided to take station ahead of that ship. At 6.19 p. m., however other battleships were sighted, and Admiral Evan-Thomas realised that the Fleet was deploying to port, the 6th Division being the starboard wing column. He then determined to make a large turn of his squadron to port, in order to form astern of the 6th Division, which by this time had also turned to port to form line of battle. During the turn, which was very well executed, the ships of the 5th Battle Squadron were under fire of the enemy's leading battleships, but the shooting was not good, and our vessels received little injury.

Unfortunately, however, the helm of the Warspite jammed, and that ship, continuing her turn through sixteen points, came under a very heavy fire and received considerable injury. The disabled Warrior happened to be in close proximity at this time, and the turn of the Warspite had the effect for the moment of diverting attention from the Warrior, so that the latter vessel got clear.

The Warspite was well extricated by Captain Phillpotts from an unpleasant position and was steered to the northward to make good damages, and eventually, in accordance with directions from Rear-Admiral Evan-Thomas, returned independently to Rosyth, considerably down by the stern owing to damage aft, but otherwise not much injured.

By 6.38 p. m. the remaining ships of the 5th Battle Squadron were in station astern of the Agincourt (1st Battle Squadron), the last ships of the line.

At 6.33 p. m., as soon as the battle cruisers had passed clear, the speed of the Battle Fleet was increased to 17 knots, and this speed was subsequently maintained. The reduction of speed to 14 knots during the deployment caused some "bunching" at the rear of the line, as the signal did not get through quickly. The reduction had, however, to be maintained until the battle cruisers had formed ahead.

Experience at all Fleet exercises had shown the necessity for keeping a reserve of some three knots of speed in hand in the case of a long line of ships, in order to allow of station being kept in the line under conditions of action, when ships were making alterations of course to throw out enemy's fire, to avoid torpedoes, or when other independent action on the part of single ships, or of divisions of ships, became necessary, as well as to avoid excessive smoke from the funnels; for this reason the Fleet speed during the action was fixed at 17 knots. In the 1st Battle Squadron, some ships had at times to steam 20 knots, showing the necessity for this reserve. Up to 7.10 p. m. also the flotillas were not in station ahead.

At 6.14 p. m. the enemy's salvoes were falling near ships of the 1st Battle Squadron, and the Marlborough's Division of the Battle Squadron became engaged with some ships of the enemy's Battle Fleet at 6.17 p. m. immediately after turning for the deployment. At this time fire was opened by the Marlborough on a ship stated to be of the "Kaiser" class, at a range of 13,000 yards

and on a bearing 20° abaft the starboard beam; this knowledge enables us to deduce the position of the van of the German Battle Fleet at this time.

Our rear ships were now able to make out the enemy's Fleet steering to the eastward, the battle cruisers leading, followed by the Battle Fleet in single line, the order being, four ships of the "Koenig" class in the van, followed by ships of the "Kaiser" and "Heigoiland" classes, the rear of the line being invisible. A report that had reached me at 4.48 p. m. from the Commodore of the 2nd Light Cruiser Squadron indicated that ships of the "Kaiser" class were in the van of the Battle Fleet. The order of the Fleet may have been changed subsequent to this report, but there is no doubt that ships of the "Koenig" class led during the Fleet action. The point is not, however, of importance.

At about 6.38 p. m. the 6th Division was in line and our deployment was complete.

Enemy shells had been falling close to the Colossus and her 5th Division since 6.11 p. m., and these ships opened fire at 6.30 p. m.; but the condition of visibility made it difficult to distinguish the enemy's battleships.

At 6.23 p. m. a three-funnelled enemy vessel had passed down the line, on the starboard, or engaged, side of our Fleet, apparently partly disabled. Her identity could not at the time be clearly established, but her German colours were flying and she was in a position for attacking the Battle Fleet by torpedoes; at 6.20 p. m. the Iron Duke fired a few turret salvos at her; she was fired at with turret guns by other vessels and was seen to sink at the rear of the line.

At this time, owing to smoke and mist, it was most difficult to distinguish friend from foe, and quite impossible to form an opinion on board the Iron Duke, in her position towards the centre of the line, as to the formation of the enemy's Fleet. The identity of ships in sight on the starboard beam was not even sufficiently clear for me to permit of fire being opened; but at 6.30 p. m. it became certain that our own battle cruisers had drawn ahead of the Battle Fleet and that the vessels then before the beam were battleships of the "Koenig" class. The order was, therefore, given to open fire, and the Iron Duke engaged what appeared to be the leading battleship at a range of 12,000 yards on a bearing 20° before the starboard beam; other ships of the 3rd and 4th Divisions (the 4th Battle Squadron) opened fire at about the same time, and the van divisions (2nd Battle Squadron) very shortly afterwards; these latter ships reported engaging enemy battle cruisers as well as battleships. The fire of the Iron Duke, which came more directly under my observation, was seen to be immediately effective, the third and fourth salvos fired registering several palpable hits. It appeared as if all the enemy ships at that time in sight from the Iron Duke (not more than three or four, owing to smoke and mist) were receiving heavy punishment, and the second battleship was seen to turn out of the line badly on fire, and settling by the stern. A large number of observers in the Thunderer, Benbow, Barham, Marne, Morning Star and Magic stated afterwards that they saw this ship blow up at 6.50 p. m.

The visibility was very variable and perhaps averaged about 12,000 yards to the southward, though much less on other bear-

ings, but ranges could not at times be obtained from the range-finders of the Iron Duke at a greater distance than 9,000 yards, although at 7.15 p. m., in a temporary clear channel through the mist, good ranges of 15,000 yards were obtained of a battleship at which four salvos were fired by the Iron Duke before she was again hidden by smoke and mist. The very baffling light was caused principally by low misty clouds, but partly also by the heavy smoke from the funnels and guns of the opposing Fleets. The direction of the wind was about west-south-west with a force 2, causing the enemy's funnel smoke to drift towards our line.

The visibility at the rear of the battle line was apparently greater than in the centre at about 7 p. m., and the enemy's fire, which was probably being concentrated on our rear ships, was more accurate at this period, but quite ineffective, only one ship, the Colossus, being hit by gunfire, although numerous projectiles were falling near the ships of the 1st and 5th Battle Squadrons.

Whilst observers in ships in the van and centre of the Battle Fleet could see only three or four enemy vessels at any one time, those in the ships of the rear division did occasionally see as many as eight, and were consequently better able to distinguish the formation and movements of the enemy's Battle Fleet. It was not possible, owing to the small number of ships in sight, due to smoke and mist, to distribute the fire of the battleships by signal in the customary manner; the only course to adopt was for the captains to direct the fire of their guns on to any target which they could distinguish.

The course of the Fleet on deployment had been south-east by east, as already stated, but the van had hauled in to southeast without signal shortly after deployment in order to close the enemy, and at 6.50 p. m., as the range was apparently opening, the course was altered by signal to south "by divisions" in order to close the enemy. The King George V., leading the van of the Battle Fleet, had just anticipated this signal by turning to south. The alteration was made "by divisions" instead of "in succession" in order that the enemy should be closed more rapidly by the whole Battle Fleet.

This large turn (of four points) "by divisions" involved some small amount of "blanketing" of the rear ships of one division by the leading ships of that next astern, and at one time the Thunderer was firing over the bows of the Iron Duke, causing some slight inconvenience on the bridge of the latter ship; the "blanketing," however, was unavoidable and the loss of fire involved was inappreciable.

At 6.45 p. m. one or two torpedoes crossed the track of the rear of our battle line, and the Marlborough altered course to avoid one. They were apparently fired, at long range, by enemy destroyers, which were barely visible to the ships in rear and quite invisible to those on board the Iron Duke. They might, however, have been fired by enemy battleships which were within torpedo range, or by a submarine, the Revenge reporting that it was thought that one had been rammed by that ship. The tracks of some of the torpedoes were seen by the observers stationed aloft, and were avoided by very skilful handling of the ships by their captains.

At 6.54 p. m., however, a heavy explosion occurred under the fore bridge of the Marlborough, abreast the starboard for-

ward hydraulic engine-room. The ship took up a list of some seven degrees to starboard, but continued in action so effectively that she avoided three more torpedoes shortly afterwards, reopened fire at 7.3 p. m., and at 7.12 p. m. fired fourteen rapid salvos at a ship of the "Koenig" class, hitting her so frequently that she was seen to turn out of line.

The signal from Sir Cecil Burney of the damage to his flagship stated that the vessel had been struck by a "mine or torpedo." It was assumed by me that a torpedo had hit the ship, as so many vessels had passed over the same locality without injury from mine. This proved to be the case, the track of this torpedo not having been sufficiently visible to enable Captain Ross to avoid it.

The fact of the tracks of so many of the enemy's torpedoes being visible was a matter of great surprise to me, and I think to other officers. Reports had been prevalent that the Germans had succeeded in producing a torpedo which left little or no track on the surface. The information as to the visibility of the tracks did not reach me until the return of the Fleet to harbour, as although one torpedo was reported by observers on board the destroyer Oak to have passed close ahead of the Iron Duke at about 7.35 p. m., finishing its run of 2,000 yards beyond that ship, and a second was observed by the Benbow to pass apparently ahead of the Iron Duke at 8.30 p. m., neither of them was seen on board the flagship by the trained look-outs specially stationed for the purpose.

Some ten minutes after the alteration of course to south, a signal was made to the 2nd Battle Squadron to take station ahead of the Iron Duke and for the 1st Battle Squadron to form astern. This signal had, however, been already anticipated by the vessels ahead of the Iron Duke in accordance with the general battle orders giving discretionary powers to the commanders of squadrons, and the line had been partly reformed before the signal was made.

An incident occurred at about 6.47 p. m. which was an indication of the spirit prevailing in the Fleet, of which it is impossible to speak too highly. The destroyer *Acasta*, which had been badly hit aft during her attack on enemy light cruisers in company with the *Shark* and had her engines disabled, was passed by the Fleet. Her commanding officer, Lieut.-Commander J. O. Barron, signalled the condition of his ship to the Iron Duke as that ship passed, leaving the *Acasta* on her starboard or engaged side. The ship's company was observed to be cheering each ship as she passed. It is satisfactory to relate that this destroyer and her gallant ship's company were subsequently brought into Aberdeen, being assisted by the *Nonsuch*.

Shortly after 6.55 p. m. the Iron Duke passed the wreck of a ship with the bow and stern standing out of the water, the centre portion apparently resting on the bottom, with the destroyer *Badger* picking up survivors. It was thought at first that this was the remains of a German light cruiser, but inquiry of the *Badger* elicited the lamentable news that the wreck was that of the *Invincible*. It was assumed at the time that she had been sunk either by a mine or by a torpedo and the latter appeared to be the more probable cause of her loss. Subsequent information, however, showed that she was destroyed by gunfire, causing her magazines to explode, as already recorded.

At 7 p. m. Sir David Beatty signalled reporting that the enemy was to the westward.

Our alteration of course to south had, meanwhile, brought the enemy's line into view once more, and between 7.0 and 7.30 p. m. the Battle Fleet was again in action with battleships and also battle cruisers, as they could be distinguished in the haze, which at that period was very baffling. The range varied from as much as 15,000 yards at the van to as little as 8,500 in the rear, this difference in range indicating that the enemy's Fleet was turning to the westward, as shown in the plan No. 9.

In spite of the difficult conditions, the fire of many of our battleships was very effective at this period. Some instances may be given. At 7.15 p. m. the Iron Duke, as already mentioned, engaged a hostile battleship at 15,000 yards range and on a bearing 74 degrees from right ahead. At 7.20 she trained her guns on a battle cruiser of "Luetzow" type, abaft the beam, which hid herself by a destroyer smoke screen; at 7.17 p. m. the King George V. opened fire on a vessel, taken to be the leading ship in the enemy's line, at a range of about 13,000 yards; the Orion at a battleship; the St. Vincent was "holding her target (a battleship) effectively till 7.26 p. m., the range being between 10,000 and 9,500 yards;" the Agincourt at 7.6 p. m. opened fire at 11,000 yards on one of four battleships that showed clearly out of the mist, and judged that at least four of her salvoes "straddled" the target; the Revenge was engaging what were taken to be battle cruisers, obtaining distinct hits on two of them; the Colossus from 7.12 to 7.20 p. m. was engaging a ship taken to be a battle cruiser, either the Derfflinger or Luetzow, at ranges between 10,000 and 8,000 yards, and observed several direct hits, two being on the water line; whilst the Marlborough, as already mentioned, "engaged a ship of the 'Koenig' class." Other vessels reported being in effective action during this period. The Royal Oak, the ship next astern of the Iron Duke, opened fire at 7.15 p. m. on the leading ship of three vessels taken to be battle cruisers, at a range of 14,000 yards; this ship was hit and turned away, and fire was shifted to the second ship which was lost to sight in the mist after a few rounds had been fired. It was difficult to be certain of the class of vessel on which fire was being directed, but one or more of the enemy's battle cruisers had undoubtedly dropped astern by 7 p. m., as a result of the heavy punishment they had received from our battle cruisers and the 5th Battle Squadron, and were engaged by ships of the Battle Fleet.

Both at this period and earlier in the action, the ships of the 1st Battle Squadron were afforded more opportunities for effective fire than the rest of the Battle Fleet, and the fullest use was made of the opportunities. This squadron, under the able command of Sir Cecil Burney, was known by me to be highly efficient, and very strong proof was furnished during the Jutland battle, if proof were needed, that his careful training had borne excellent results. The immunity of the ships of the squadron from the enemy's fire, whilst they were inflicting on his vessels very severe punishment, bears eloquent testimony to the offensive powers of the squadron.

At 7.5 p. m. the whole battle line was turned together three

*The Calliope reported at 7.18 p. m.: "Two enemy battleships, "Koenig" class, engaged by Orion's division, observed to be heavily on fire."

more points to starboard to close the range further; immediately afterwards two ships ahead of the Iron Duke reported a submarine a little on the port bow; at 7.10 p. m. a flotilla of enemy destroyers, supported by a cruiser, was observed to be approaching on a bearing S. 50 W. from the Iron Duke, and the Fleet was turned back to south in order to turn on to the submarine and bring the ships in line ahead, ready for any required maneuver. A heavy fire was opened on the destroyers at ranges between 10,000 and 6,500 yards. At the latter range the destroyers turned and passed towards the rear of the line in a heavy smoke screen. One destroyer was seen by several observers to sink from the effects of the gunfire.

At a sufficient interval before it was considered that the torpedoes fired by the destroyers would cross our line, a signal was made to the Battle Fleet to turn two points to port by subdivisions. Some minutes later a report was made to me by Commander Bellairs (the officer on my Staff especially detailed for this duty, and provided with an instrument for giving the necessary information) that this turn was insufficient to clear the torpedoes, as I had held on until the last moment; a further turn of two points was then made for a short time. As a result of this attack and another that followed immediately, some twenty or more torpedoes were observed to cross the track of the Battle Fleet, in spite of our turn, the large majority of them passing the ships of the 1st and 5th Battle Squadrons at the rear of the line. It was fortunate that, owing to the turn away of the Fleet, the torpedoes were apparently near the end of their run, and were consequently not running at high speed. They were all avoided by the very skilful handling of the ships by their captains, to whom the highest credit is due, not only for their skill in avoiding the torpedoes, but for the manner in which the ships, by neighborly conduct towards each other, prevented risk of collision and kept their station in the line. The captains were most ably assisted by the admirable look-out kept by the organisation that existed for dealing with this danger.

I doubt, however, whether the skill shown would have saved several ships from being torpedoed had the range been less and the torpedoes consequently running at a higher speed. Frequent exercises carried out at Scapa Flow showed conclusively that the percentage of torpedoes that would hit ships in a line when fired from destroyers at ranges up to 8,000 yards was comparatively high, even if the tracks were seen and the ships were maneuvered to avoid them. One very good reason is that torpedoes are always a considerable but varying distance ahead of the line of bubbles marking their track, making it difficult to judge the position of the torpedo from its track. Many ships experienced escapes from this and other attacks: thus the Hercules reported that she "turned away six points to avoid the torpedoes, one of which passed along the starboard side and 40 yards across the bow, and the other passed close under the stern"; the Neptune reported that "the tracks of three torpedoes were seen from the fore-top, one of which passed very close and was avoided by the use of the helm"; in the Agincourt's report, a statement occurred that "at 7.8 p. m. a torpedo just missed astern, it having been reported from aloft and course altered"; and again, "at 7.38 p. m. tracks of two torpedoes running parallel were observed approaching; course altered to avoid torpedoes which passed ahead; and at 8.25 p. m. torpedo track on starboard side, turned at full

speed; torpedo broke surface at about 150 yards on the starboard bow"; the *Revenge* remarked, "at 7.35 p. m. altered course to port to avoid two torpedoes, one passed about ten yards ahead and the other about twenty yards astern, and at 7.43 p. m. altered course to avoid torpedoes, two passing astern"; the *Colossus* stated, "at 7.35 p. m. turned to port to avoid a torpedo coming from starboard side"; the *Barham* at this period reported that "at least four torpedoes passed through the line close to the *Barham*"; the *Collingwood* reported, "torpedo track was seen 20 degrees abaft the beam and coming straight at the ship; large helm was put on and the torpedo passed very close astern; at the same time another was seen to pass about thirty yards ahead." The captain of the *Collingwood*, in remarking on the destroyer attack, added, "the great value of this form of attack on a line of ships is, to me, an outstanding feature of the Battle Fleet action."

The first two-point turn was made at 7.23 p. m. and the Fleet was brought to a south by west course by 7.33 p. m. (that is, to a course one point to the westward of the course of the Fleet before the destroyer attack). The total amount by which the range was opened by the turns was about 1,750 yards.

The 4th Light Cruiser Squadron and the 4th and 11th Flotillas had been delayed in reaching their action station at the van until about 7.15 p. m., owing to the turns to the westward made by the Battle Fleet to close the enemy. In accordance with arrangements made previously to counter destroyer attacks, these vessels were ordered out to engage the enemy destroyers, which, according to the report of the Commodore Le Mesurier, commanding the 4th Light Cruiser Squadron, were steering towards the head of the division led by the *King George V.*, the van ship of the Battle Fleet. Although not very well placed for the first attack for the reason given above, they were in a very favourable position to counter the second destroyer attack, which took place at 7.25 p. m. The enemy's flotilla was sighted bearing 30 degrees before the starboard beam of the *Iron Duke* at a range of 9,000 yards and was heavily engaged by the light forces and the 4th, 1st, and 5th Battle Squadrons. During this attack three enemy destroyers were reported as sunk by the fire of the battleships, light cruisers and destroyers; one of them, bearing a Commodore's pendant, being sunk at 7.50 p. m. by a division of the 12th Flotilla, consisting of the *Obedient*, *Marvel*, *Mindful* and *Onslaught*, which attacked them near the rear of our battle line. The *Southampton* and *Dublin*, of the 2nd Light Cruiser Squadron, attacked and sank a second destroyer at this period. At least six torpedoes were observed to pass ahead of, or through the track of the 4th Light Cruiser Squadron during their attack on the German flotilla.

The destroyer attacks were combined with a retiring movement on the part of the enemy's Battle Fleet, the movement being covered with the aid of a heavy smoke screen. Although this retirement was not visible from the *Iron Duke* owing to the smoke and mist, and was, therefore, not known to me until after the action, it was clearly seen from the rear of our line, as is indicated by the following citations:

The Captain of the *Valiant* stated in his report: "At 7.23 p. m. enemy's Battle Fleet now altered course together away from us and broke off the action, sending out a low cloud of

smoke which effectually covered their retreat and obscured them from further view."

The Captain of the Malaya reported, referring to this period: "This was the last of the enemy seen in daylight, owing to their Battle Fleet having turned away."

Sir Cecil Burney stated in regard to this period: "As the destroyer attack developed, the enemy's Battle Fleet in sight were observed to turn at least eight points until their sterns were towards our line. They ceased fire, declined further action, and disappeared into the mist."

The Captain of the St. Vincent said: "The target was held closely until 7.26 p. m. (32 minutes in all), when the enemy had turned eight or ten points away, disappearing into the mist and with a smoke screen made by destroyers to cover them as well."

Rear-Admiral Evan-Thomas remarked: "After joining the Battle Fleet the 5th Battle Squadron conformed to the movements of the Commander-in-Chief, engaging the rear ships of the enemy's battle line, until they turned away and went out of sight, all ships apparently covering themselves with artificial smoke."

The Captain of the Revenge recorded: "A flotilla of destroyers passed through the line and made a most efficient smoke screen. At this period the enemy's fleet turned eight points to starboard and rapidly drew out of sight."

In the German account of the action at this stage, it is stated, in more than one passage, that the British Fleet during this action between the Battle Fleets was to the northward of the High Sea's Fleet. This is correct of the earlier stages. The account refers to the attacks on our line by the German destroyer flotillas, and states finally that in the last attack the destroyers did not sight the heavy ships, but only light cruisers and destroyers to the north-eastward. The accuracy of this statement is doubtful, since the destroyers were clearly in sight from our heavy ships. But the account then proceeds to state that "the German Commander-in-Chief turns his battle line to a southerly and southwesterly course on which the enemy was last seen, but he is no longer to be found."

This is illuminating. It is first stated that our ships bore north and north-east from the enemy and then that the enemy turned to south and south-west, that is, directly away from the British Fleet. Thus the fact that the German Fleet turned directly away is confirmed by Germans.

No report of this movement of the German Fleet reached me, and at first it was thought that his temporary disappearance was due to the thickening mist, especially as firing could be heard from the battleships in rear, but at 7.41 p. m., the enemy Battle Fleet being no longer in sight from the Iron Duke, course was altered "by divisions" three points more to starboard (namely, to southwest) to close the enemy, and single line ahead was again formed on the Iron Duke on that course.

At this period the rear of our battle line was still in action at intervals with one or two ships of the enemy's fleet, which were probably some that had dropped astern partially disabled, but by 7.55 p. m. fire had practically ceased.

At about 7.40 p. m. I received a report from Sir David Beatty stating that the enemy bore north-west by west from the *Lion*, distant 10 to 11 miles, and that the *Lion's* course was south-west. Although the battle cruisers were not in sight from the *Iron Duke*, I assumed the *Lion* to be five or six miles ahead of the van of the Battle Fleet, but it appeared later from a report received in reply to directions signalled by me at 8.10 p. m. to the *King George V.* to follow the battle cruisers, that they were not in sight from that ship either.

At this time the enemy's Battle Fleet seems to have become divided, for whilst Sir David Beatty reported the presence of battleships north-west by west from the *Lion*, other enemy battleships were observed to the westward (that is, on the starboard bow of the *Iron Duke*), and the course of the Fleet was at once altered "by divisions" to west in order to close the enemy; this alteration was made at 7.59 p. m.

It will be observed that all the large alterations of course of the Battle Fleet during the engagement were made "by divisions" instead of "in succession from the van, or together." The reason was that in this way the whole Fleet could be brought closer to the enemy with far greater rapidity, and in a more ordered formation, than if the movement had been carried out by the line "in succession."

The objection to altering by turning all ships together was the inevitable confusion that would have ensued as the result of such a maneuver carried out with a very large Fleet under action conditions in misty weather, particularly if the ships were thus kept on a line of bearing for a long period.

The battleships sighted at 7.59 p. m. opened fire later on ships of the 4th Light Cruiser Squadron, which had moved out to starboard of the battle line to engage a flotilla of enemy destroyers which were steering to attack the Battle Fleet. The *Calliope*, the flagship of Commodore Le Mesurier, was hit by a heavy shell and received some damage, but retained her fighting efficiency and fired a torpedo at the leading battleship at a range of 6,500 yards; an explosion was noticed on board a ship of the "Kaiser" class by the *Calliope*.* The ships sighted turned away and touch could not be regained, although sounds of gunfire could be heard from ahead at 8.25 p. m., probably from our battle cruisers, which obtained touch with and engaged some of the enemy's ships very effectively between 8.22 and 8.28 p. m. The *Falmouth* was the last ship of the Battle Cruiser Fleet to be in touch with the enemy, at 8.38 p. m.; the ships then in sight turned eight points together away from the *Falmouth*.

At 8.30 p. m. the light was failing and the Fleet was turned "by divisions" to a south-west course, thus reforming single line again.

During the proceedings of the Battle Fleet described above, the battle cruisers were intermittently in action, as mentioned in Sir David Beatty's report.

At first, touch with the enemy was lost owing to the large alterations of course carried out by the High Sea Fleet, but it

*All our battle cruisers felt this heavy explosion which was clearly concussion under water, and may have been caused by the *Calliope's* torpedo obtaining a hit.

was regained at 7.12 p. m., the battle cruisers opening fire at 7.14 p. m., though only for two and a half minutes, and increasing speed to 22 knots. At this period the battle cruisers were steering south-west by south to south-west, and this course took them from the port to the starboard bow of the Battle Fleet by 7.12 p. m. The movements of our battle cruisers, which were at this time between four and five miles ahead of the van of the Battle Fleet could not be distinguished, owing partly to the funnel and cordite smoke from the battle cruisers themselves, but even more to the funnel smoke from the numerous cruisers, light cruisers and destroyers which were attempting to gain their positions ahead of the van.

The movements of the enemy's fleet could not be distinguished from our Battle Fleet owing again to their own funnel and cordite smoke, and also to the smoke screens which ships and destroyers were making to conceal their movements.

It will be realised that these conditions, which particularly affected the Battle Fleet, did not apply to the same extent to our ships ahead of our Battle Fleet. They had little but the smoke of the enemy's leading ships to obscure the view. Farther to the rear, the Battle Fleet had the smoke of all our craft ahead of it as well as that of the enemy's long line of ships.

Conditions which were perhaps difficult ahead of the Battle Fleet were very much accentuated in the Battle Fleet. Vice-Admiral Sir Martyn Jerram, in his report, remarked on this point: "As leading ship, in addition to the hazy atmosphere, I was much hampered by what I imagine must have been cordite fumes from the battle cruisers after they had passed us, and from other cruisers engaged on the bow, also by funnel gases from small craft ahead, and for a considerable time by dense smoke from the Duke of Edinburgh, which was unable to draw clear."

The general position at 6.45 p. m. and again at 7.15 p. m. is shown in the plans to be found at the end of the text.

At 7.10 p. m., according to remarks from the *Minotaur*, flagship of Rear-Admiral H. L. Heath, commanding the 2nd Cruiser Squadron, the position as seen from that ship was as follows: "The 2nd Cruiser Squadron was in single line ahead three to four miles on the port side of the *King George V.*, gaining on her slightly, but with all the destroyers and light craft between her and the *King George V.* The battle cruisers were about four miles distant on the starboard bow of the *Minotaur*; owing to their higher speed, the battle cruisers rapidly increased their distance from the Battle Fleet to some eight miles."

At 7.5 p. m. according to a report from the *Shannon*, of the 2nd Cruiser Squadron, the *Shannon's* course was S. 10 W., "the 2nd Cruiser Squadron endeavouring to take station on the engaged bow of the Battle Fleet; the Battle Fleet still engaged, the battle cruisers not engaged and turned slightly to port." And again at 7.22 p. m. a report says: "The Duke of Edinburgh had now taken station astern of the *Shannon*, the battle cruisers were engaged and had wheeled to starboard. Leading ships of the 2nd Cruiser Squadron were starting to cross the bows of the Battle Fleet from port to starboard. Battle cruisers firing inter-

*Judged by reports from other cruisers the positions here described should be timed at about 6.50 to 7 p. m., and the diagrams show this accordingly.

mittently, light cruisers making their way through the destroyer flotillas to attack the enemy light cruisers." Rear-Admiral Heath stated: "At 7.11 p. m. I proceeded with the squadron at 20 knots to take up station astern of the Battle Cruiser Fleet, which was then engaged with the enemy." He added: "One salvo fell short on the starboard bow of the Minotaur and some others in close proximity"; and later says, "even when the salvo referred to in the preceding paragraph fell, no more than the flashes of the enemy's guns could be seen."

Further remarks from the Shannon, at a later stage, were: "At 8 p. m. Battle Fleet altered course to starboard to close the enemy, and by 8.15 was lost to sight, bearing about north by east."

"At 8.15 p. m. Battle Fleet, out of sight from Shannon, was heard to be in action."

"At 8.30 p. m. the visibility of grey ships was about 9,000 yards." "At 8.45 p. m. King George V. again sighted, bearing north-north-east. Visibility had again improved, and her range was estimated at about 10,000 yards. Conformed to her course S. 75 W. to close enemy."

At 7.20 p. m. the ships engaged by our battle cruisers turned away and were lost to sight. They were located for a moment at 8.20 p. m. with the aid of the 1st and 3rd Light Cruiser Squadrons, and, although they disappeared again at once, they were once more located and effectively engaged between 8.22 and 8.28 p. m. at about 10,000 yards range. They turned away once more and were finally lost to sight by the 3rd Light Cruiser Squadron (the last ships to keep in touch) at 8.38 p. m., steaming to the westward.

This was the last opportunity which the battle cruisers had of putting the finishing touch upon a fine afternoon's work. They had, under the very able and gallant leadership of Sir David Beatty, assisted by the splendid squadron so well commanded by Rear-Admiral Evan-Thomas, gone far to crush out of existence the opposing Battle Cruiser Squadron.

It will be seen from the above account that our battle cruisers experienced great difficulty in locating and holding the enemy after 7.20 p. m., even when far ahead of the Battle Fleet, with its small craft, and therefore in a position of freedom from the smoke of our own vessels and the enemy's line. After this time, 7.20 p. m., the battle cruisers were only engaged for some six minutes. The enemy turned away on each occasion when he was located and showed no disposition to fight.

The visibility by this time had become very bad; the light was failing, and it became necessary to decide on the disposition for the night.

III.—THE NIGHT ACTION

The situation, which had never been really clear to me owing to the fact that I had not seen more than a few ships at a time, appeared to be as follows:

We were between the enemy and his bases, whether he shaped a course to return via the Horn Reef, via Heligoland direct, or via the swept channel which he was known to use, along the coast of the West Frisian Islands.

I concluded that the enemy was well to the westward of us. He had been turning on interior lines throughout. We had altered course gradually during the action from south-east by east to west, a turn of 13 points, or 146 degrees, in all, and the result must have been to place his ships well to the westward and ahead of us; although it was possible that ships which had fallen out owing to damage might be to the northward.

The possibility of a night action was, of course, present to my mind, but for several reasons it was not my intention to seek such an action between the heavy ships.

It is sufficient to mention the principal arguments against it.

In the first place, such a course must have inevitably led to our Battle Fleet being the object of attack by a very large destroyer force throughout the night. No senior officer would willingly court such an attack, even if our battleships were equipped with the best searchlights and the best arrangements for the control of the searchlights and the gunfire at night.

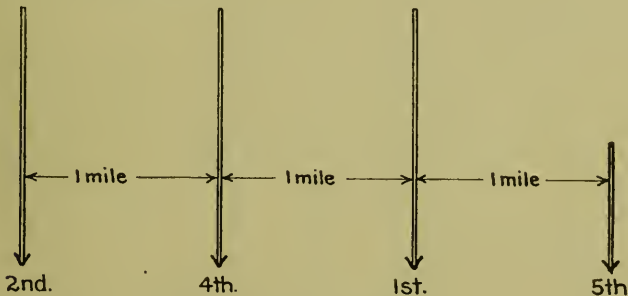
It was, however, known to me that neither our searchlights nor their control arrangements were at this time of the best type. The fitting of Director-Firing gear for the guns of the secondary armament of our battleships (a very important factor for firing at night) had also only just been begun, although repeatedly applied for. The delay was due to manufacturing and labour difficulties. Without these adjuncts I knew well that the maximum effect of our fire at night could not be obtained, and that we could place no dependence on beating off destroyer attacks by gunfire. Therefore, if destroyers got into touch with the heavy ships, we were bound to suffer serious losses with no corresponding advantage. Our own destroyers were no effective antidote at night, since, if they were disposed with this sole object in view, they would certainly be taken for enemy destroyers and be fired on by our own ships.

But putting aside the question of attack by destroyers, the result of night actions between heavy ships must always be very largely a matter of chance, as there is little opportunity for skill on either side. Such an action must be fought at very close range, the decision depending on the course of events in the first few minutes. It is, therefore, an undesirable procedure on these general grounds. The greater efficiency of German searchlights at the time of the Jutland action, and the greater number of torpedo tubes fitted in enemy ships, combined with his superiority in destroyers, would, I knew, give the Germans the opportunity of scoring heavily at the commencement of such an action.

The question then remained as to the course to be steered. The first desideratum was to keep the British Fleet between the enemy and his bases, so as to be in a position to renew the action at dawn. Daylight was rapidly disappearing; it was necessary to form the Fleet for the night as quickly as possible to avoid visual signalling after dark; and it was also necessary to place our destroyers in a position where the chances of their coming in contact with our own ships was reduced to a minimum, and yet giving them an opportunity of attacking the enemy's capital ships during the night. The Grand Fleet was formed at the time in practically a single line, steering approximately west-south-west. I considered that a southerly course

would meet the situation and would enable me to form the Fleet very quickly, and, if I put the destroyers astern, they would fulfil three conditions: first, they would be in an excellent position for attacking the enemy's fleet should it also turn to the southward with a view to regaining its bases during the night (which seemed a very probable movement on the part of the enemy); secondly, they would also be in position to attack enemy destroyers should the latter search for our fleet with a view to a night attack on the heavy ships; finally, they would be clear of our own ships, and the danger of their attacking our battleships in error or of our battleships firing on them would be reduced to a minimum.

Accordingly, at 9 p. m., I signalled to the Battle Fleet to alter course by divisions to south, informing the Flag officers of the Battle Cruiser Fleet, the cruiser and light cruiser squadrons, and the officers commanding destroyer flotillas of my movements in order that they should conform. Shortly afterwards I directed the Battle Fleet to assume the second organisation and to form divisions in line ahead disposed abeam to port, with the columns one mile apart. This had the effect of placing the Battle Fleet as shown in the diagram:



BATTLE SQUADRONS.

My object in closing the columns to one mile apart was to ensure that adjacent columns should not lose sight of each other during the night, and that therefore they would not mistake our own ships for those of the enemy.

As soon as the Battle Fleet had turned to the southerly course the destroyer flotillas were directed to take station five miles astern of the Battle Fleet. At 9.32 p. m. a signal was made to the mine-laying flotilla leader *Abdiel* (Captain Berwick Curtis) to proceed to lay a mine-field in a defined area some 15 miles from the *Vyl Lightship*, over which it was expected the High Sea Fleet would pass if the ships attempted to regain their ports during the night via the Horn Reef. The *Abdiel* carried out this operation unobserved in the same successful manner as numerous other similar operations had been undertaken by this most useful little vessel; from the evidence of one of our submarines, stationed near the Horn Reef, which reported on return to her base having heard several underwater explosions between 2.15 and 5.30 a. m. on June 1st, it was judged that some enemy ships had struck mines.

At 10 p. m. the position of the *Iron Duke* was Lat. 56.22 N.,

Long. 5.47 E., course south, speed 17 knots, and the order of the Fleet from west to east was:

Battle Cruiser Fleet (except 2nd Light Cruiser Squadron);

Cruiser Squadrons:

Battle Fleet;

2nd Light Cruiser Squadron astern of the 5th Battle Squadron;

4th Light Cruiser Squadron ahead of the Battle Fleet;

11th, 4th, 12th, 9th, 10th and 13th Flotillas disposed from west to east, in that order, astern of the Battle Fleet.

Shortly before the turn of the Fleet to the southward for the night, a destroyer attack took place on the 2nd Light Cruiser Squadron at the rear of our battle line. This was reported to me shortly after 9 p. m., but immediately afterwards a further report stated that the enemy had been driven off to the north-west.

At 10.4 p. m. Commodore Hawksley, in the *Castor*, commanding the destroyer flotillas, after dropping astern, sighted three or more vessels at a range of 2,000 yards which he took to be enemy battle cruisers. If the German report is to be believed, the ships were light cruisers and included the *Hamburg* and *Elbing*. The enemy at once opened a rapid and accurate fire, and the *Castor* was hit and her bridge and wireless telegraphy gear damaged, making it impossible to signal to the 11th Flotilla, which the *Castor* was leading. The damage to the *Castor* was slight. The *Castor*, *Magic*, and *Marne* fired torpedoes at the enemy, but the remaining destroyers of the flotilla refrained from doing so, not being certain of the identity of the vessels in sight. The enemy disappeared after a violent detonation, following on the discharge of the torpedoes, had been felt in the engine-rooms of the destroyers near the *Castor*.

At 10.15 a. m. the *Castor* sighted a German destroyer on her starboard bow and opened fire with all guns at point-blank range. She was not seen again.

At 10.20 p. m. the 2nd Light Cruiser Squadron sighted and engaged five enemy vessels, apparently a cruiser with four light cruisers, probably of the 4th Scouting Group. The enemy again opened fire with great rapidity and accuracy, and concentrated his fire on our two leading ships, the *Southampton* and *Dublin*, at very short range. Both vessels suffered considerable damage during the 15 minutes' engagement and there were fairly heavy casualties; three fires which broke out on board the *Southampton* were promptly extinguished by fine work on the part of the officers and men, in spite of the fact that the hoses had been much cut up by shell fire.

The enemy squadron disappeared after this short but fierce engagement, and it is probable that the German light cruiser *Frauenlob*, whose loss was admitted by the enemy, was sunk during this action, which took place in that case between our own 2nd Light Cruiser Squadron and the German 4th Scouting Group.

At 11.30 p. m. the 4th Flotilla sighted and attacked enemy cruisers steering a south-easterly course. Again the vessels sighted opened fire immediately, and the flotilla leader *Tipperary*, commanded by Captain Wintour, the leader of the Flotilla, was severely damaged by gunfire and set on fire forward; the *Broke*, leader of the 2nd half Flotilla, received injury to her steering-gear, rend-

ering her temporarily unmanageable and causing her to ram the destroyer Sparrowhawk, with the result that it became necessary to abandon the latter destroyer on the following morning after taking off her crew. The destroyer Spitfire (Lieutenant-Commander C. W. E. Trelawny), next astern of the Tipperary, fired torpedoes at a four-funnelled cruiser which appeared to be hit and sinking, and the Spitfire then collided with a German light cruiser and, in scraping along her side, carried off some 29 feet of the skin plating of the German ship.

The remainder of the 4th Flotilla, after this engagement, while steering to the south-eastward, came into contact at midnight with the enemy's 2nd Battle Squadron, and one ship (probably the Pommern) was torpedoed and sunk either by the Ardent (Lieutenant-Commander Marsden) or Ambuscade (Lieutenant-Commander G. A. Coles) or Garland (Lieutenant-Commander R. S. Goff). A heavy and accurate fire was opened by the enemy and the destroyer Fortune (Lieutenant-Commander F. G. Terry) was sunk.

The flotilla was again in action a little later with some enemy battleships, and the Ardent attacked and fired a torpedo, but the result could not be observed as a very heavy fire was concentrated on the Ardent, which sank with colours flying after a most gallant night's work. It is sad to record that Lieutenant-Commander Marsden and one man were the only survivors; they were picked up by a destroyer on June 1st after having been five hours in the water.

The 12th Flotilla had formed astern of the 1st Battle Squadron after dark. The 1st Battle Squadron was somewhat astern of the remainder of the Fleet during the night, owing to the Marlborough not being able to keep up 17 knots, although steaming at the revolutions for this speed. Consequently the 12th Flotilla was also more than five miles astern of the main portion of the Battle Fleet. At 11.30 p. m., also this flotilla was obliged for some little time to steer a south-easterly course, owing to the movements of another flotilla on the starboard hand, the identity of which cannot be determined with certainty. The result was that the 12th Flotilla was probably some ten miles to the north-eastward of the 1st Battle Squadron by midnight. The incident was a fortunate one, since it brought the flotilla into contact with one of the enemy's battle squadrons.

At 1.45 a. m., Captain Stirling, leading the flotilla in the Faulknor, sighted on the starboard bow this battle squadron, consisting of six ships steering south-east. The leading ships were thought to belong to the "Kaiser" class. Captain Stirling altered his course to one parallel with that of the enemy and increased speed to 25 knots to draw ahead, with the intention of turning to attack on a north-westerly course (the reverse of the enemy's course), in order to give an opportunity of getting to close range. This attack was carried out at 2 a. m. at a range of about 3,000 yards, and all destroyers fired their torpedoes at the second and third ships in the line. Some took effect on the third battleship in the line, the explosion being so violent and the flame reaching to such a height that it appeared to those in our destroyers that the explosion of the torpedoes must have detonated the magazine and destroyed the ship.

Our destroyers were then forced to withdraw by the enemy light cruisers, which were in company with the battle squadron.

The destroyer *Maenad* (Commander J. P. Champion) had, however, not turned to the north-westward with the remainder of the flotilla, as it had been anticipated that the attack would have been made with torpedo tubes bearing to starboard, and her tubes were not ready to fire to port. Commander Champion held on the south-easterly course and, turning later than the rest of the flotilla, fired one port tube, then, turned again to south-east, trained his tubes to starboard, and at 2.25 a. m. fired two torpedoes to starboard at the fourth ship in the line at a range between 4,000 and 5,000 yards, one of which took effect. In this case, too, the flame of the explosion reached the mast head, and the ship was not seen again, although those ahead and astern of her were visible.

It is of interest to note that at the time of the first attack on this squadron six battleships were visible. After the first attack only five were seen by Captain Stirling, and twenty-five minutes later five were sighted by the *Maenad*, and after the *Maenad*'s attack only four were visible. The evidence that at least one of the battleships was sunk was considered at the time to be very strong, particularly as the reports from the *Maenad* and from Captain Stirling were sent to me quite independently, and Commander Champion was unaware of the fact that Captain Stirling had reported six ships as the original number in the battle squadron, and five as the number remaining after his attack.

When Captain Stirling had located the enemy's battle squadron he reported the fact by wireless, but the signal was, unfortunately, not received by any ship owing, presumably, to the strong interference caused by German wireless signalling at the time.

The destroyers of the 9th, 10th, and 13th Flotillas took station astern of the Battle Fleet in company with the *Champion* (Captain Farie), leader of the 13th Flotilla; the *Fearless*, leader of the 9th Flotilla, had not been able to maintain touch with her flotilla. Many of the destroyers of these flotillas lost touch with the *Champion* during the night, and the flotillas became somewhat scattered.

At 12.30 a. m. a large vessel, taken at first for one of our own ships, crossed the rear of the flotilla at high speed, passing close to the *Petard* and *Turbulent*. She rammed the *Turbulent* and opened a heavy fire on both the *Turbulent* and *Petard*; the *Turbulent* sank and the *Petard* was damaged.

At 2.35 a. m. the destroyer *Moresby*, of the 13th Flotilla, sighted four battleships of the "Deutschland" class, and attacked, firing one torpedo; an explosion was subsequently heard.

It was impossible to state with certainty which of our destroyers were actually successful in their attacks. The enemy, of course, denied that any marked success was obtained by our attacks, but information received after the action made it certain that at least four battleships of the "Dreadnaught" type were hit by torpedoes, in addition to the pre-Dreadnaught battleship *Pommern*, which was admitted to have been sunk by a torpedo, as was the light cruiser *Rostock*.

Although the credit for the successful attacks cannot be attributed to particular destroyers, the work of the flotillas as a whole, and particularly of the 4th and 12th Flotillas, was characterised by the splendid dash, skill and gallantry for which our destroyers had been conspicuous throughout the War. They were

most ably led and achieved magnificent work under very difficult conditions.

There is no doubt at all that the German organisation for night action was of a remarkably high standard. In the first place, the use of star shells, at that time unfamiliar to us, was of the greatest service to them in locating our destroyers without revealing their own positions; and, secondly, their searchlights were not only very powerful (much more so than ours), but their method of controlling them and bringing guns and searchlights rapidly on to any vessel sighted was excellent. It also appeared that some system of director-firing was fitted to the guns of their secondary armament.

The increased offensive power given by these devices did not, however, prevent our destroyers from inflicting great damage on the enemy during their night attacks, although they led to the loss of some valuable destroyers and still more valuable lives. Captain Wintour, leader of the 4th Flotilla, an officer of wide experience of destroyer work and a fine leader, was a very heavy loss, and other splendid officers perished with their gallant crews. Our destroyer service has, indeed, every reason to be exceedingly proud of the achievements of the flotillas, both during the day action of May 31st and during the night following that action.

Gunfire and under-water explosions were heard at intervals during the night, and, curiously enough, the under-water explosions, four or five in number, were quite clearly recorded on a barograph in the Malaya, a ship well placed for the purpose, as she was in the rear. There is little doubt that these records showed the explosion of our torpedoes against enemy ships.

From the Battle Fleet it was evident shortly after dark that our destroyers were in action. Star shells were fired with great frequency by the enemy, and they produced a very brilliant illumination, leaving the enemy ships in complete darkness and not revealing their positions.

At 11 p. m. the light cruiser *Active*, astern of the 2nd Battle Squadron, observed a ship coming up from astern, and shortly afterwards saw searchlights switched on and a heavy fire opened against this vessel by a ship, or ships, on her starboard quarter. She appeared to be heavily hit and to sink. It is possible that this ship may have been the *Black Prince*, which had apparently lost touch with our fleet during the day action.

Shortly after this incident the *Active* passed over some submerged object which she bumped heavily. Subsequent examination showed that some 15 feet of her bilge keel had been torn away. It was not conceivable that the object struck could have been submerged wreckage from any ship which had taken part in the action, no fighting having occurred in the vicinity, and it seemed possible that the *Active* had struck an enemy submarine. At 11.30 p. m. the *Colossus* also passed over some submerged object which was felt to scrape along the bottom of the ship. Subsequent examination showed damage to both starboard propeller blades. Again there is doubt as to what the obstruction could have been; it was certainly not wreckage from any ship that had been in action.

At 2 a. m. on June 1st Vice-Admiral Sir Cecil Burney informed me that the *Marlborough* could not maintain the Fleet speed of

17 knots any longer, on account of the stress on the bulkheads, and that she had been obliged to ease to 12 knots. I directed him to order the ship to proceed to the Tyne or Rosyth, passing south of the German mined area. Sir Cecil Burney called the light cruiser Fearless alongside the Marlborough, and was transferred in her, with his Staff, to the Revenge, the Fearless being then detached to escort the Marlborough.

Some idea of the area covered by the different engagements which constituted the Battle of Jutland will be gathered from a consideration of the distances steamed by our ships during the operations.

The Battle Cruisers steamed some 64 miles between 3.48 p. m., the time of opening fire, and 6.17 p. m., the time that the Battle Fleet commenced action, and a further distance of some 57 miles to 9 p. m., when the Fleet turned to the southward for the night. The Battle Fleet steamed some 47 miles between the commencement of their engagement with the High Sea Fleet and the turn to the southward at 9 p. m.

The whole Fleet steamed some 85 miles during the period covered by the night action—9 p. m. to 2 a. m.

At 2.47 a. m., as dawn was breaking, the Fleet altered course to north and formed single line ahead in the order—2nd Battle Squadron, 4th Battle Squadron, 1st Battle Squadron (less the 6th Division). The 5th Battle Squadron rejoined at 3.30 a. m. and took station ahead of the 2nd Battle Squadron.

The weather was misty and the visibility even less than on May 31st, being only some three or four miles, and I considered it desirable under these conditions, and in view of the fact that I was not in touch with either my cruisers or destroyers, to form single line, accepting the danger of submarine attack on a long line in order to be ready for the enemy's Battle Fleet, if suddenly sighted. The 6th Division of the Battle Fleet was not in sight at daylight, having dropped astern owing to the reduction in speed of the Marlborough and the change of flag from the Marlborough to the Revenge. Partly on account of the low visibility and partly because of the inevitable difference in dead reckoning between ships, due to their many movements in course of the action and in the night, considerable difficulty was experienced in collecting the Fleet. This applied particularly to the destroyer flotillas, as they had been heavily engaged, and their facilities for computing their positions under these conditions were only slight; but the same difficulty was experienced with all classes of ships, and, although awkward, the fact did not cause me any surprise. The cruisers were not sighted until 6 a. m., the destroyers did not join the Battle Fleet until 9 a. m., and the 6th Division of the Battle Fleet, with the Vice-Admiral of the 1st Battle Squadron, was not in company until the evening.

The difficulties experienced in collecting the Fleet (particularly the destroyers), due to the above causes, rendered it undesirable for the Battle Fleet to close the Horn Reef at daylight, as had been my intention when deciding to steer to the southward during the night. It was obviously necessary to concentrate the Battle Fleet and the destroyers before renewing action. By the time this concentration was effected it had become apparent that the High Sea Fleet, steering for the Horn Reef, had passed behind the shelter of the German minefields in the early morn-

ing on the way to their ports. The presence of a Zeppelin, sighted at 3.30 a. m., made it certain that our position at that time would be known to the enemy, should he be at sea, but the information obtained from our wireless directional stations during the early morning showed that ships of the High Sea Fleet must have passed the Horn Reef on a southerly course shortly after daylight.

At 3 a. m. the destroyer Sparrowhawk, which was lying disabled in Lat. 55.54 N., Long. 5.59 E., sighted a German light cruiser two miles to the eastward, steaming slowly to the northward. After being in sight for about five minutes this vessel slowly heeled over and sank, bow first. The Sparrowhawk was subsequently sighted by the Marksman and others of our destroyers, and being too seriously damaged for towing back to a base, was sunk by the Marksman.

Shortly after 3.30 a. m. the report of gunfire to the westward was audible in the Battle Fleet, and at 3.38 Rear-Admiral Trevelyan Napier, commanding the 3rd Light Cruiser Squadron, reported that he was engaging a Zeppelin in a position to the westward of the Battle Fleet. Course was altered "by divisions" to west at 3.44 a. m., as it seemed that the presence of the airship might possibly indicate the presence also of the High Sea Fleet. At 3.50 a. m. a Zeppelin was in sight from the Battle Fleet, but nothing else; course was altered back again to north and fire opened on the airship, which, however, was too high for the fire to be effective. She disappeared to the eastward. She was sighted subsequently at intervals.

At 4.10 a. m. the Battle Fleet was formed into divisions in line ahead, disposed abeam to starboard, in order to widen the front and to reduce the risk of submarine attack. At 4.25 a. m. the cruiser Dublin reported by wireless that she had sighted an enemy cruiser and two destroyers, and she gave her position.

At 5.15 a. m. the Battle Cruiser Fleet joined the Battle Fleet in accordance with orders signalled, and was directed to locate the cruiser reported by the Dublin, whilst the Battle Fleet searched to the south-eastward for one of the enemy's battle cruisers which was thought to be in a damaged condition and probably, therefore, still making for a German port. At 4.45 a. m. the Battle Fleet was in Lat. 55.29 N., Long. 6.02 E.; at 5 a. m. the Commodore of the flotillas (Commodore Hawksley), with destroyers, reported himself as being in Lat. 55.48 N., Long. 6.22 E.; at 5.48 a. m. the Battle Cruiser Fleet was in Lat. 55.45 N., Long. 6.16 E., steering south-east at 18 knots, and at 6.15 a. m. altered course to south. At 6 a. m., not having met the destroyers, the Battle Fleet altered course to south-east, with the cruisers in company, steaming at 17 knots, and maintained that course until 7.15 a. m., at which time course was altered to north, the Battle Cruiser Fleet altering to north-east at 7.30 a. m. and to north at 8 a. m.

The Dublin was sighted at 7.55 a. m. and reported having lost sight in a fog, in Lat. 55.28 N., Long. 6.32 E., of the cruiser and torpedo-boat destroyers she had reported, and in reply to further inquiries she stated that the cruiser was apparently not disabled and was steaming fast.

At 8.15 a. m. the Battle Fleet was in Lat. 55.54 N., Long. 6.10

E., steering north at 17 knots, turning at 8.52 a. m. to a south-west course.

Between 8 a. m. and 9 a. m. a considerable amount of wreckage was passed, and the bodies of dead German bluejackets were seen in the water. The wreckage of the destroyer *Ardent* was also passed. Drifting mines in considerable numbers were seen during the whole forenoon of the 1st June, and there were one or two reports of submarines being sighted. At 10 a. m. the Battle Cruiser Fleet was again in sight, ahead of the Battle Fleet, and course was altered to north by west, the destroyers, which had now joined, being stationed to form a submarine screen.

At noon the Battle Fleet was in position Lat. 56.20 N., Long. 6.25 E., and at 12.30 p. m. the Battle Cruiser Fleet was in Lat. 56.32 N., Long. 6.11 E.

It was now clear that all disabled enemy vessels had either sunk or had passed inside the mine-fields en route to their bases. It had been evident since the early morning, from the definite information obtained by our directional stations, that the enemy's fleet was returning to port. All our own injured vessels were also en route for their bases, and I decided to return with the whole Fleet, and gave the necessary instructions to the Rosyth force to return independently. Diagram 4 shows the movement of the Fleet during the night of May 31st and the forenoon of June 1st.

The Harwich force, under Commodore Tyrwhitt, had been kept in port by Admiralty orders on May 31st, and was despatched to sea on the morning of June 1st, when I was informed that it was being sent out to join me and to replace vessels requiring fuel. At 7 a. m. I instructed Commodore Tyrwhitt to send four of his destroyers to screen the *Marlborough* to her base; he informed me at 2.30 p. m. that he had sighted the *Marlborough*. At 10.40 a. m. I had reported to the Admiralty that I did not require the Harwich force. I desired Commodore Tyrwhitt to strengthen the *Marlborough's* escort and told him that I did not need his ships. They would have been of great use at daylight on June 1st had they been on the scene at that time, and it is needless to add how much I should have welcomed the participation of the Harwich force in the action had circumstances admitted of this. I knew well the extreme efficiency and the fine fighting spirit of this force which, under its gallant and distinguished commodore, had rendered such splendid service throughout the War.

The *Marlborough* reported at 11 a. m. that a torpedo had been fired at her and had missed. Some anxiety was felt about the ship on the morning of June 2nd, as bad weather set in and her pumps became choked; tugs were ordered out to meet her, but she arrived in the Humber at 8 a. m.

The *Warrior*, which had been taken in tow by the sea-plane carrier *Engadine*, was in Lat. 57.18 N., Long. 3.54 E. at 8 a. m. on the 1st June, but the crew was taken off by the *Engadine* and the ship abandoned later in the day, as the weather had become bad and it was evident the ship could not remain afloat. The work of rescue was very smartly carried out, the *Engadine* being skilfully placed alongside the *Warrior* in a considerable sea way by her Captain, Lieutenant-Commander C. G. Robinson.

and the large number of wounded transferred to her. The reports as to the condition of the *Warrior* were not clear, and it was feared that she might remain afloat, and later fall into the hands of the enemy. Therefore I detached the 2nd Cruiser Squadron, and subsequently the 3rd Light Cruiser Squadron, to search for her. The search continued until the evening of June 23rd, no trace of the ship being found. It became clear from a report received subsequently from the Captain of the *Warrior* that her condition was such that she must have sunk shortly after having been abandoned. During the search for the *Warrior*, one of the cruisers of the 2nd Cruiser Squadron sighted a submarine on the surface at dusk, opened fire, and tried to ram. It was reported quite definitely that the submarine had been sunk. Later evidence showed, however, that the submarine was one of our own vessels of this class, that she had a very narrow escape, but had dived in time to avoid injury. This was one instance, amongst others, of our own submarines being mistaken for an enemy, attacked by our own ships, and considered to be sunk. The difficulty of ascertaining definitely the result of an engagement with a submarine was thereby exemplified, and was one of the weighty reasons which led the Admiralty during the War to refrain from publishing any figures.

Some anxiety had been felt as to the safety of the destroyer *Broke*, and the 2nd Cruiser Squadron was directed to search for that vessel also, assisted by two light cruisers. She, however arrived safely in the Tyne, having been delayed by bad weather. Other disabled or partially disabled destroyers requiring assistance to reach port were the *Acasta*, towed by the *Nonsuch*, and the *Onslow*, towed by the *Defender*.

The Fleet arrived at its bases on June 2nd, fuelled, and was reported ready for sea at four hours' notice at 9.45 p. m. on that date.

Note.—In the plans and diagrams connected with this chapter there are some slight departures from those which accompanied my original despatch to the Admiralty.

That despatch was sent in under constant pressure for its early receipt and at a time when I, in common with my Staff, was very fully occupied with the arrangements connected with the repair of damaged ships, the constructive alterations which the action had shown to be necessary in our ships, and the various committees which I had formed to report on different subjects in the light of our experience. I was not, therefore, able to give the personal attention to the reports which later opportunities have afforded me, and the small modifications are the result of a close and prolonged study of these reports, and of the signals received during May 31st.

One of my first acts on returning to Scapa was to send to the King on the morning of June 3rd a message of humble duty and respectful and heartfelt wishes on His Majesty's birthday.

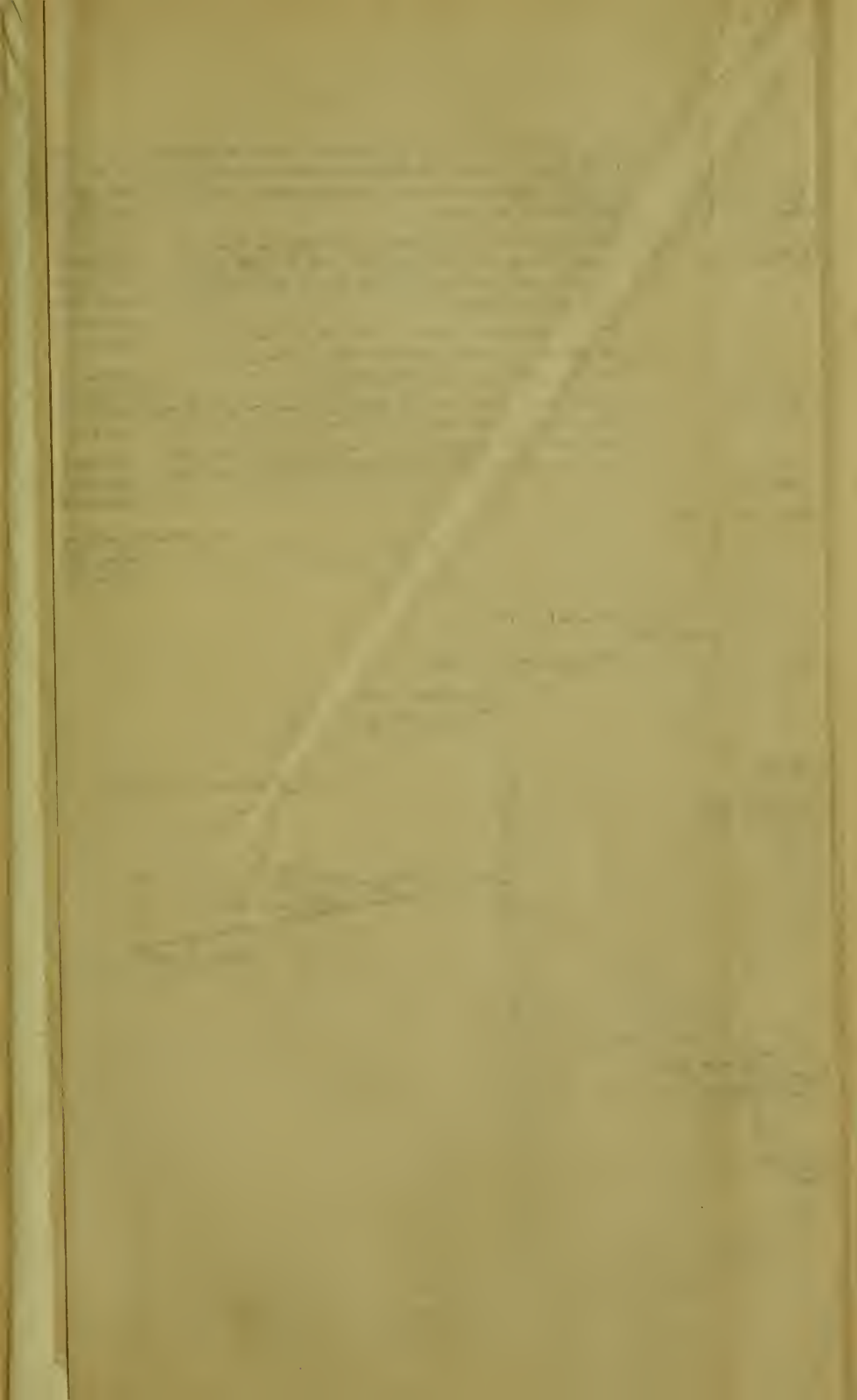
The following reply was received from His Majesty, and communicated to the Fleet:

"I am deeply touched by the message which you have sent me on behalf of the Grand Fleet. It reaches me on the morrow of a battle which has once more displayed the splendid gallantry of the officers and men under your command. I mourn the

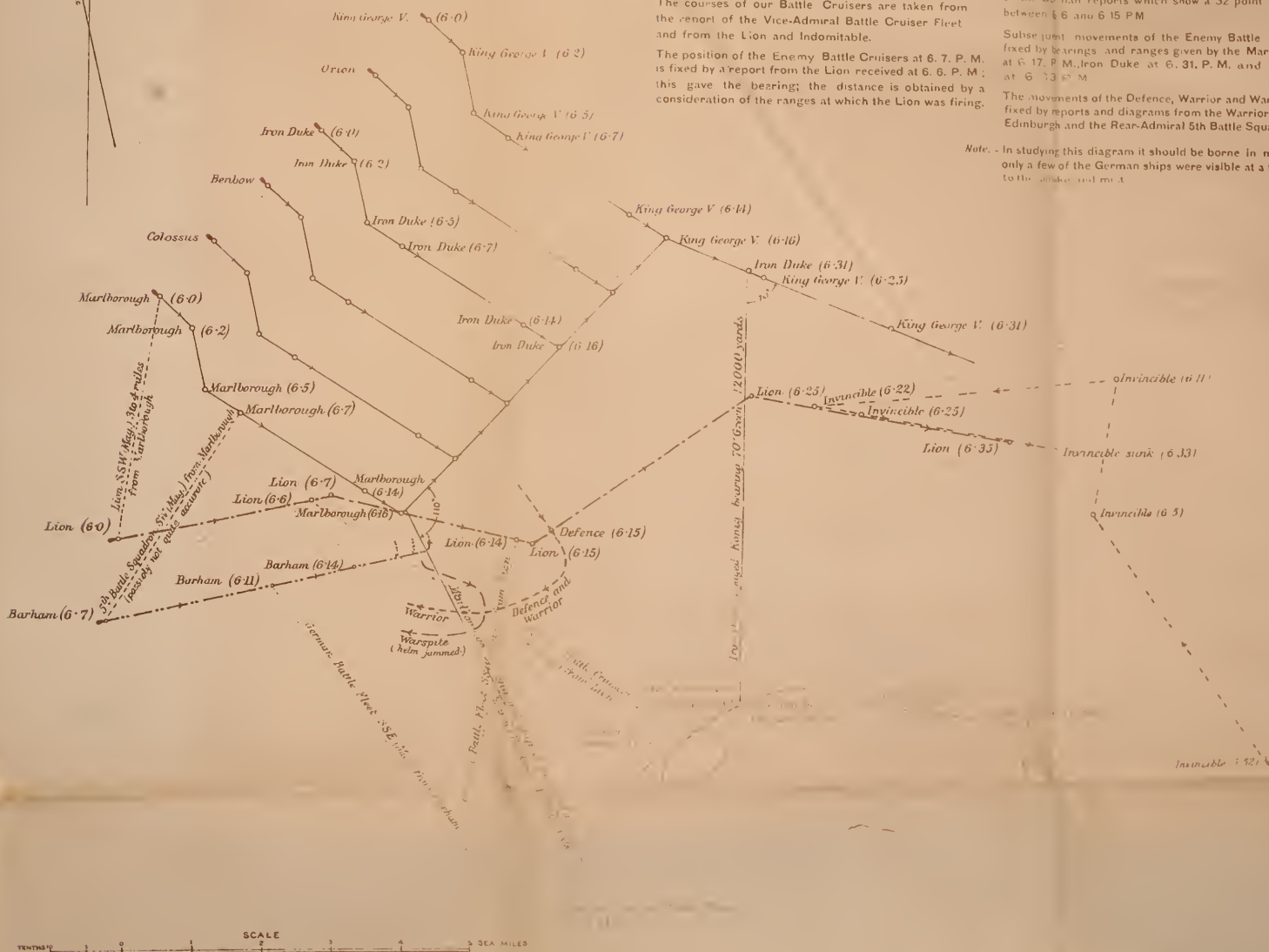
loss of brave men, many of them personal friends of my own, who have fallen in their country's cause. Yet even more do I regret that the German High Sea Fleet, in spite of its heavy losses, was enabled by the misty weather to evade the full consequences of an encounter they have always professed to desire, but for which when the opportunity arrived they showed no inclination. Though the retirement of the enemy immediately after the opening of the general engagement robbed us of the opportunity of gaining a decisive victory, the events of last Wednesday amply justify my confidence in the valour and efficiency of the fleets under your command.

"George R. I."

The simple duty remained of acknowledging this gracious message, and I added in my telegram to His Majesty that it was "a matter of the greatest gratification to all ranks to receive such an expression of Your Majesty's approval and sympathy for the loss of our gallant comrades."



PLAN OF
JUTLAND BATTLE
 BEFORE AND AFTER DEPLOYMENT



The position of our Battle Cruisers at 6.0. P. M. is fixed by a report from the Marlborough and confirmed at 6.4. P. M. by a report from the Rear-Admiral 1st Battle Squadron in the Colossus.

The position of the 5th Battle Squadron is fixed by a report from the Marlborough at 6.5. P. M. taken in conjunction with the reports of the Rear-Admiral 5th Battle Squadron.

The courses of our Battle Cruisers are taken from the report of the Vice-Admiral Battle Cruiser Fleet and from the Lion and Indomitable.

The position of the Enemy Battle Cruisers at 6.7. P. M. is fixed by a report from the Lion received at 6.6. P. M.; this gave the bearing; the distance is obtained by a consideration of the ranges at which the Lion was firing.

The position of the Enemy Battle Fleet is fixed at 6.14. P. M. from the Lion and at 6.15. P. M. from the Barham; the latter being signalled by wireless, an interval of four minutes being allowed between transmission and receipt.

Subsequent movements of the Enemy Battle Cruisers are fixed by the bearings on which our Battle Cruisers were firing and the ranges given, and by a consideration of the German reports which show a 32 point turn between 6.6 and 6.15 P. M.

Subsequent movements of the Enemy Battle Fleet are fixed by bearings and ranges given by the Marlborough at 6.17. P. M., Iron Duke at 6.31. P. M. and Monarch at 6.33 P. M.

The movements of the Defence, Warrior and Warspite are fixed by reports and diagrams from the Warrior, Duke of Edinburgh and the Rear-Admiral 5th Battle Squadron.

Note. - In studying this diagram it should be borne in mind that only a few of the German ships were visible at a time due to the smoke and mist.

Diagram II.

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Keep in mind that no information as to the Enemy Battle Fleet was received until that the only reports received had been from the "Lion", and a report at 5. 50. P. M. from "Hampton" to the effect that the Enemy Battle Cruisers were north-east from his Battle Cruisers (presumably ahead of them and right of the Fleet.)

Before there had been no sufficient information on which to base the guides of columns; deployment of the wing column to meet an enemy before the main column would necessarily be an awkward maneuver which would involve a considerable alteration of the wing column to port and a very large course of the remaining columns when

MAGNETIC

DIAGRAM TO ILLUSTRATE THE SITUATION THAT MIGHT
HAVE ARISEN HAD THE BATTLE FLEET DEPLOYED ON
THE STARBOARD WING COLUMN.



It should be borne in mind that no information as to the position of the Enemy Battle Fleet was received until 6. 14. P. M., and that the only reports received had been one at 6. 6. P. M, giving a bearing of the Enemy Battle Cruisers from the "Lion", and a report at 5. 50. P. M. from the "Southampton" to the effect that the Enemy Battle Fleet bore north-east from his Battle Cruisers (and were therefore presumably ahead of them and right ahead of our Battle Fleet.)

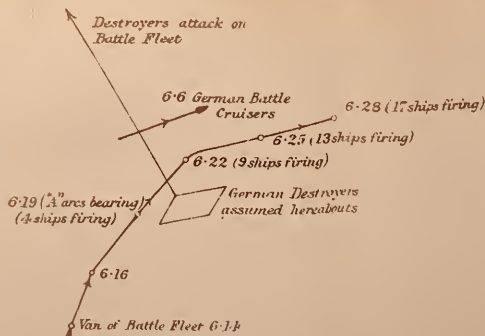
There had therefore been no sufficient information on which to re-dispose the guides of columns; deployment on the starboard wing column to meet an enemy before the starboard beam would necessarily be an awkward manoeuvre as it would involve a considerable alteration of the starboard wing column to port and a very large alteration of course of the remaining columns when coming into line astern of it.

A torpedo attack during deployment would under these conditions throw the British Battle Fleet into great confusion and a concentration of gunfire on the turning point would be very effective; our own gunfire, owing to the large alterations of course and the consequent difficulty of obtaining correct fire control data would be correspondingly ineffective: our own destroyers had been spread ahead of the Battle Fleet as a submarine screen until 6. 8. P. M. and were moving across the front in an unformed condition to the two flanks.

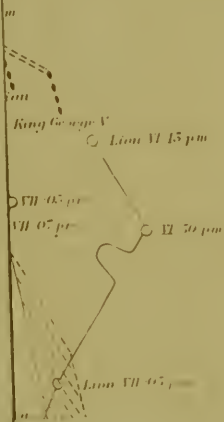
The movements that would probably have resulted and the number of ships on each side in action are shown in the diagram for each 3-minute interval from 6. 16 to 6. 28 P.M.

The three ships of the 5th. Battle Squadron would eventually have come into line ahead of the 6th. division, but would possibly have masked the fire of that division during the movement.

* In some of the rear ships only half the broadside is bearing hence the fraction.



SCALE
0 1 2 3 4 5 SEA MILES



27.03



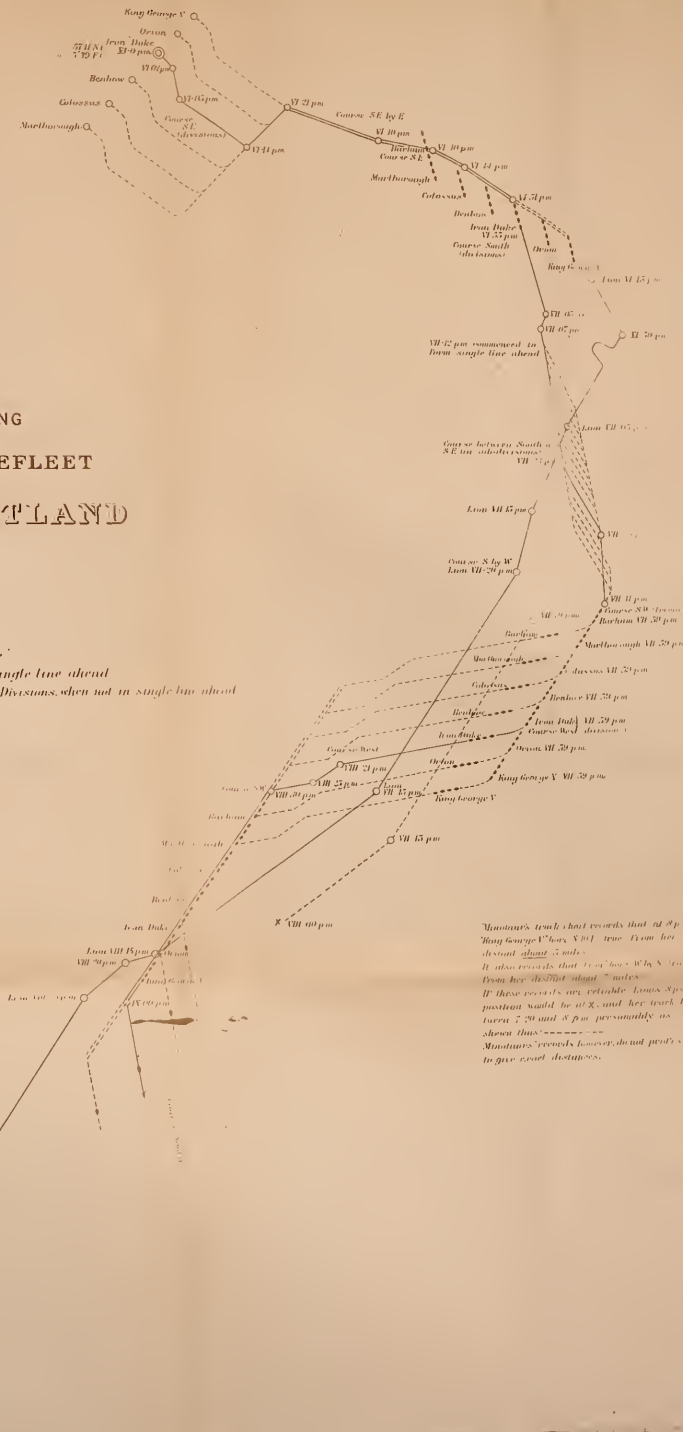
DIAGRAM SHOWING

ORDER OF THE BATTLE FLEET
BATTLE OF JUTLAND

31st MAY 1916

- Shows track of the "Iron Duke"
- Fleet in single line ahead
- Leaders of Divisions when not in single line ahead
- "Lions" track

Iron IX 29 p.m.
Course South



VII 23 p.m. commenced to form single line ahead

Gneiseu North East South in SE in subdivisions VII 27 p.m.

Iron VII 25 p.m.

Course S by W Iron VII 29 p.m.

VII 31 p.m. Course SW Iron VII 29 p.m. Marlborough VII 29 p.m.

Marlborough VII 29 p.m.

Colossus VII 29 p.m.

Iron VIII VII 29 p.m.

Orion VII 29 p.m.

King George V VII 29 p.m.

VII 35 p.m.

VII 45 p.m.

VII 50 p.m.

VII 55 p.m.

VII 58 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

VII 59 p.m.

Minotaur's track chart records that at 8 p.m. King George V leaves S 101 true from her division about 7 miles. It also records that at 8.15 p.m. W 18 S Iron Duke has 183000 ahead. If these records are reliable Iron IX's position would be at X, and her track between Z 20 and S p.m. presumably as shown thus. Minotaur's records however, do not provide to give exact distances.

TRACK OF SQUADRONS

DURING NIGHT OF
 May 31st to June 1st and
 Forenoon of June 1st 1916.

BATTLE FLEET

During night Battle Fleet in 3 columns, 1 mile apart, disposed abeam.

From 2.45 A. M. to 3.30 A. M., in single line.

From 3.30 A. M. onward, in 6 columns, 1 mile apart, disposed abeam.

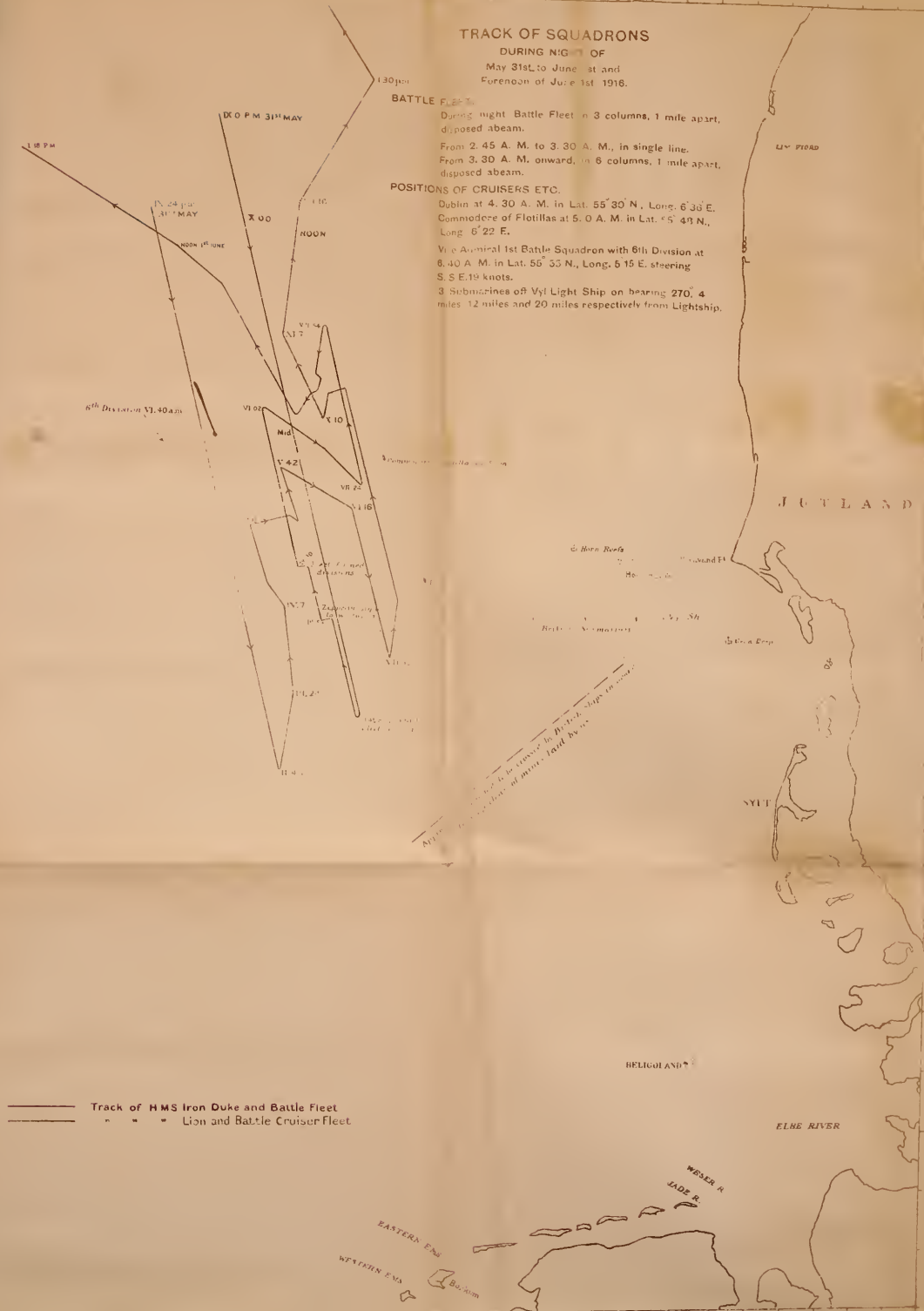
POSITIONS OF CRUISERS ETC.

Dublin at 4.30 A. M. in Lat. $55^{\circ} 30' N.$, Long. $6^{\circ} 36' E.$

Commodore of Flotillas at 5.0 A. M. in Lat. $55^{\circ} 43' N.$, Long. $6^{\circ} 22' E.$

Vice Admiral 1st Battle Squadron with 6th Division at 6.40 A. M. in Lat. $56^{\circ} 53' N.$, Long. $5^{\circ} 15' E.$, steering S. S. E. 19 knots.

3 Submarines off Vyl Light Ship on bearing 270° , 4 miles 12 miles and 20 miles respectively from Lightship.

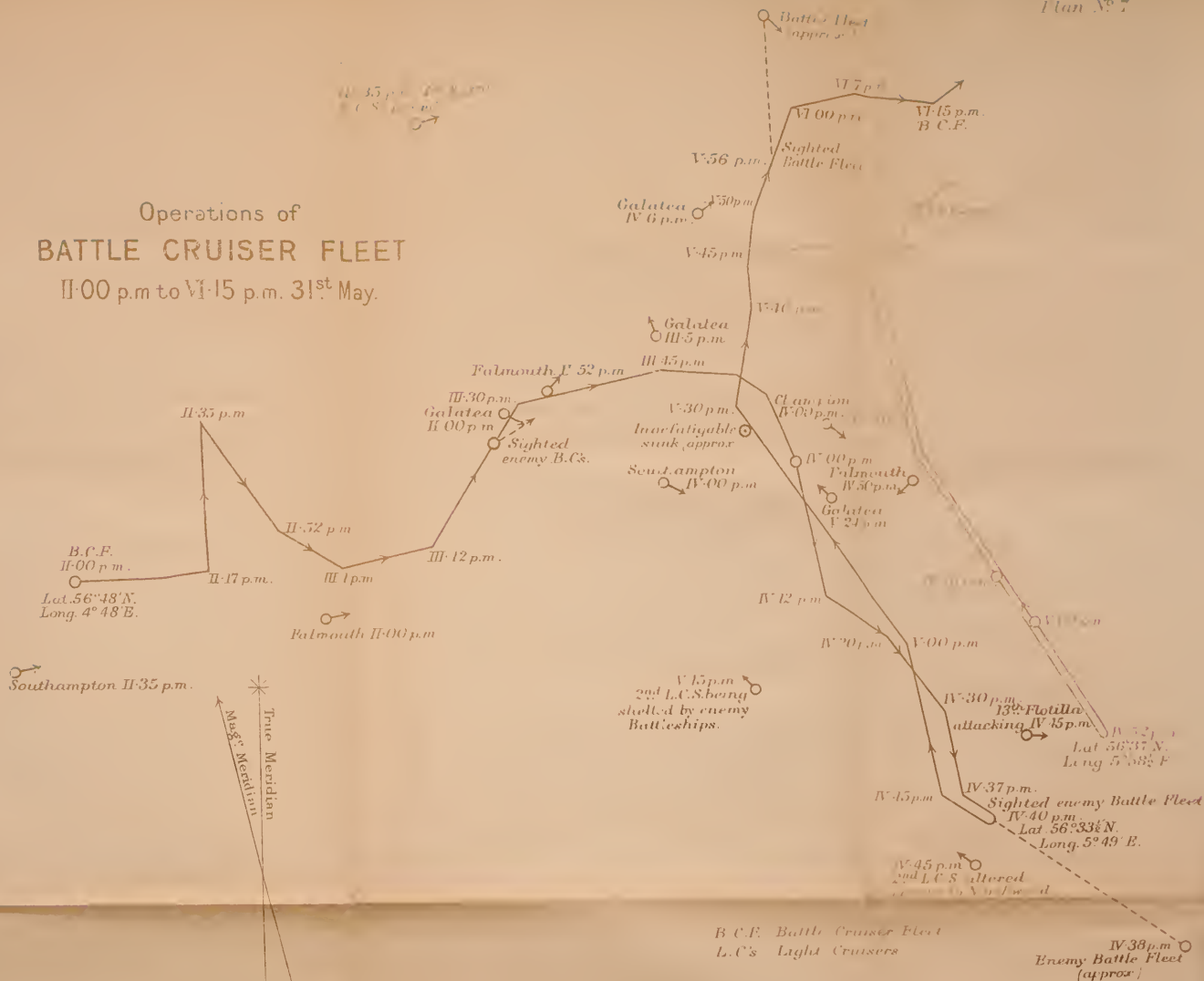


————— Track of HMS Iron Duke and Battle Fleet
 - - - - - Lion and Battle Cruiser Fleet

Map based on latest information available at the time of printing.

Operations of BATTLE CRUISER FLEET

II:00 p.m. to VI:15 p.m. 31st May.



B.C.F. Battle Cruiser Fleet

L.C.s Light Cruisers

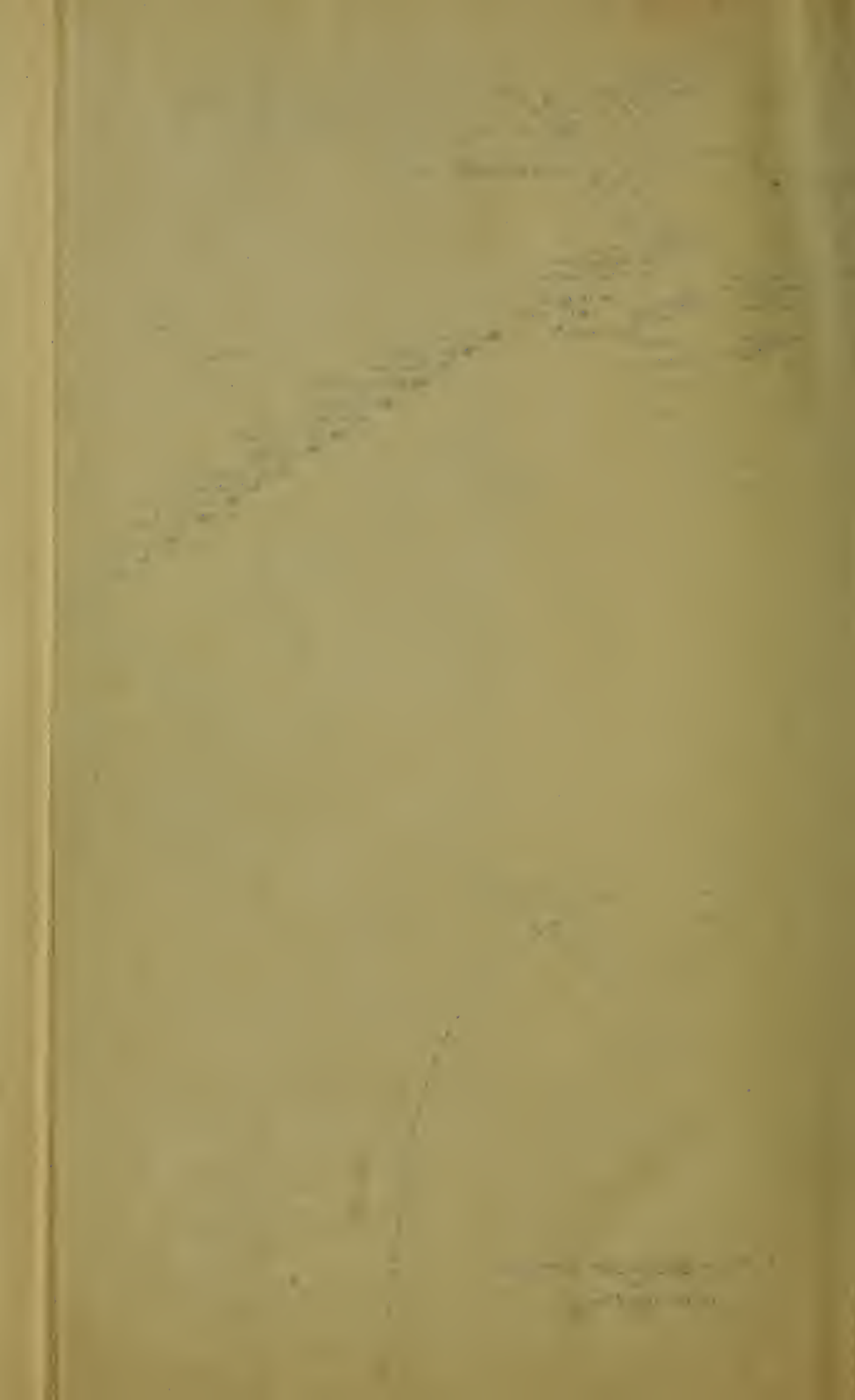
IV:38 p.m.
Enemy Battle Fleet
(approx)

0 5 10 15 20 25 30 SEA MILES

THE FIRST PART
OF THE HISTORY OF THE
CITY OF BOSTON
FROM 1630 TO 1780

CHAPTER I
OF THE FOUNDATION OF THE CITY
AND THE EARLY HISTORY OF THE
SETTLEMENTS ON THE NECK
AND IN THE BAY

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THE UNIVERSITY OF CHICAGO

GRAY

1850-1851

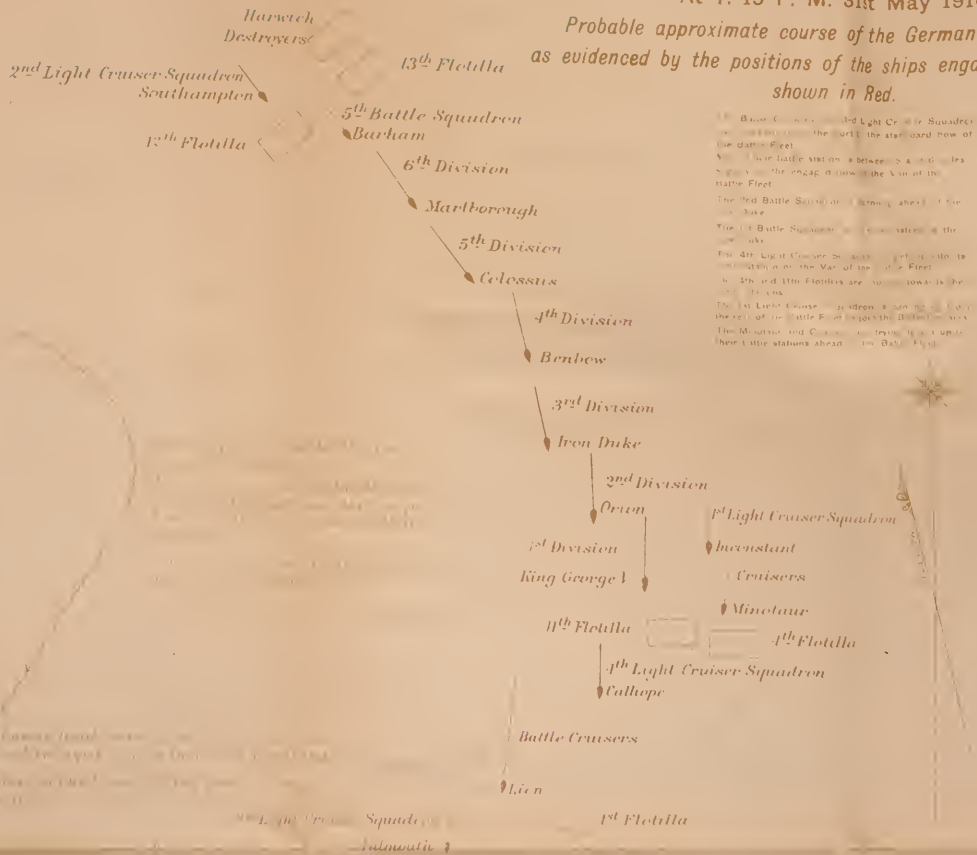
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LIBRARY

[Faint, illegible text, likely bleed-through from the reverse side of the page. The text is arranged in several columns and appears to be a list or index of some kind.]

GRAND FLEET

At 7.15 P. M. 31st May 1916.

Probable approximate course of the German Battle Fleet, as evidenced by the positions of the ships engaged at the time, shown in Red.



The 1st Battle Squadron is composed of the following ships:

The 2nd Battle Squadron is composed of the following ships:

The 3rd Battle Squadron is composed of the following ships:

The 4th Battle Squadron is composed of the following ships:

The 5th Battle Squadron is composed of the following ships:

The 6th Battle Squadron is composed of the following ships:

The 7th Battle Squadron is composed of the following ships:

The 8th Battle Squadron is composed of the following ships:

The 9th Battle Squadron is composed of the following ships:

The 10th Battle Squadron is composed of the following ships:

The 11th Battle Squadron is composed of the following ships:

The 12th Battle Squadron is composed of the following ships:

The 13th Battle Squadron is composed of the following ships:

The 14th Battle Squadron is composed of the following ships:

The 15th Battle Squadron is composed of the following ships:

The 16th Battle Squadron is composed of the following ships:

The 17th Battle Squadron is composed of the following ships:

The 18th Battle Squadron is composed of the following ships:

The 19th Battle Squadron is composed of the following ships:

The 20th Battle Squadron is composed of the following ships:

SCALE

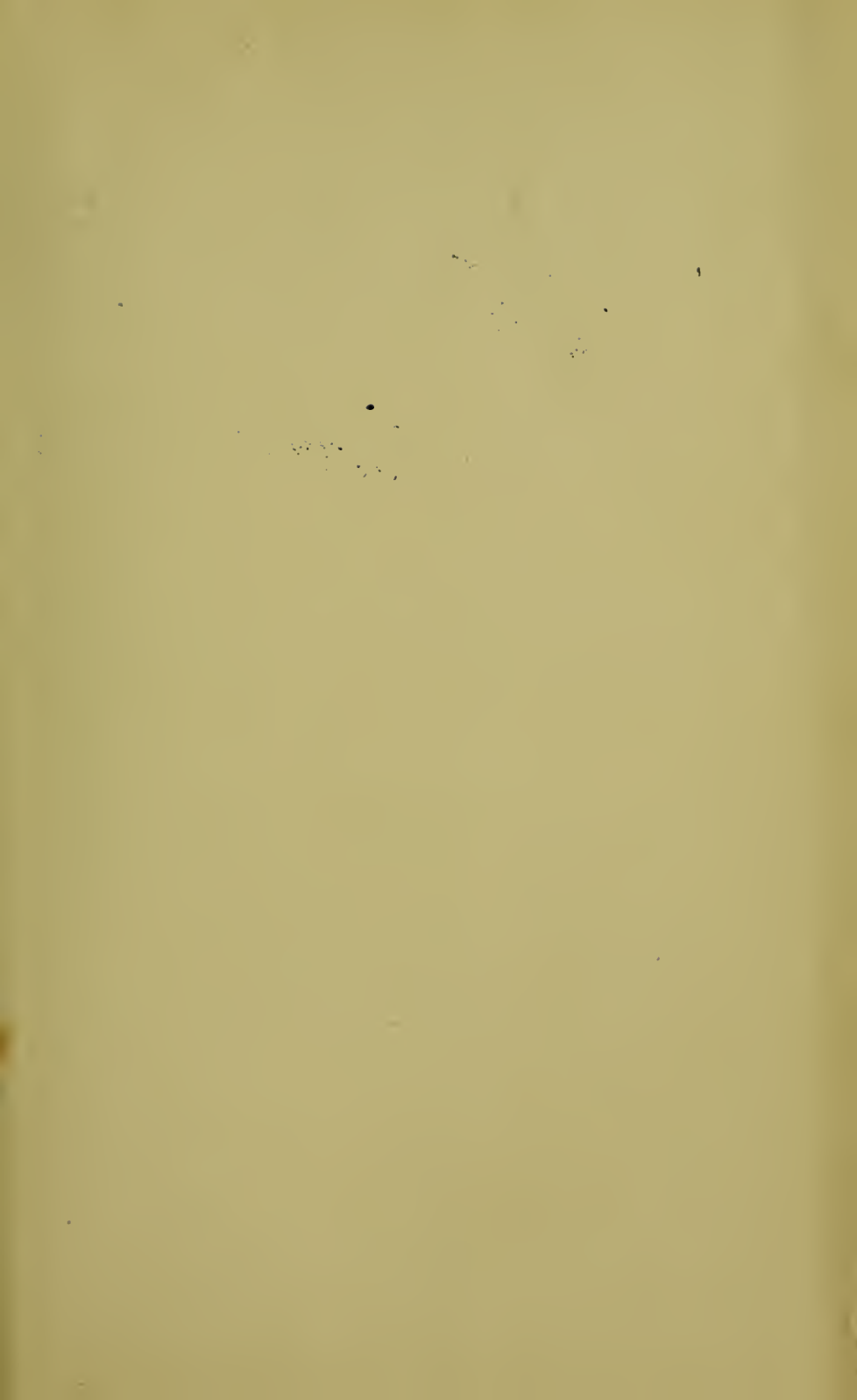
TENTHS 5 0 2 3 4 5 SEA MILES

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LIBRARY OF CONGRESS



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